

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

THE UNITED STATES OF AMERICA,

Plaintiff and Counter-Defendant,

Civil Action No. 77-71100

And

Honorable John Feikens

vs

THE STATE OF MICHIGAN,

Defendant, Counter-Plaintiff
and Cross-Defendant,

vs

THE CITY OF DETROIT, a municipal
corporation and THE DETROIT WATER
AND SEWERAGE DEPARTMENT,

Defendants and Cross-Plaintiff,

vs

ALL COMMUNITIES AND AGENCIES
UNDER
CONTRACT WITH THE CITY OF
DETROIT
FOR SEWAGE TREATMENT SERVICES,

et al

**CITY OF DETROIT'S BRIEF IN RESPONSE TO MACOMB COUNTY'S
MOTION AND BRIEF FOR PRELIMINARY INJUNCTION**

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STATEMENT OF ISSUES PRESENTED

1. Is Macomb County entitled to extraordinary remedy of injunctive relief where it has failed to even address the crucial element of irreparable injury, but instead has simply ignored its burden of making a particularized showing of irreparable injury? DWSD submits that this failure is fatal to Macomb County's request for such relief.

2. Is Macomb County entitled to the extraordinary remedy of injunctive relief where it can be adequately compensated through look back procedures regularly used by DWSD to adjust rates retrospectively based on changed circumstances?

3. Has Macomb County shown a likelihood of success on the merits, even though the challenged rates have been set in accordance with the law, the contract between Macomb County and DWSD and the prior Rate Settlement Agreements, and where the law grants a presumption of validity to the rates set by DWSD, and in order to void that action, Macomb County bears a heavy burden of showing that such rates are arbitrary, capricious or unreasonable?

4. Has Macomb County failed to show a likelihood of success on the merits where its claims sound in negligence and would be barred by governmental immunity?

5. Has Macomb County failed to show a likelihood of success on the merits where it relies on the prudent investment rule to attack DWSD's determination of its rates, where that rule does not apply and has not been applied to municipally owned utilities and applies only where the public utility or its investors earn a rate of return on their investments, which is not the case with DWSD's sewer rates?

6. Should the relief requested by Macomb County be denied, where to grant that relief would force all users to bear the cost of repairs of the Romeo Arm interceptor even though that Interceptor solely benefits Macomb County, and such action would be contrary to the

contract between Macomb County and DWSD and prior Rate Settlement Agreements and contrary to the long established practices of DWSD in setting such rates and to the law?

CONTROLLING AUTHORITIES

Barber ex rel. Barber v. Dearborn Public Schools, 286 F.Supp.2d 847 (E.D.Mich. 2003)

Basicomputer Corp. v. Scott, 973 F.2d 507, 511 (6th Cir. 1992)

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Sampson v. Murray, 415 U.S. 61, 90 (1974)

40 C.F.R. §§ 35.929-1 through 35.929-3

M.C.L. 460.6

STATEMENT OF FACTS

In this action, Macomb County seeks to enjoin DWSD from collecting, through the rates charged to Macomb County, the costs DWSD incurred in performing timely repairs to the Romeo Arm of the Macomb interceptor system. Those repairs ensured the provision of uninterrupted sewerage service to the Macomb County communities exclusively served by the Romeo Arm. Those communities, and only those communities, benefited from the efforts DWSD undertook to implement those repairs. While Macomb does not dispute the critical benefits its citizens enjoyed as the direct result of those efforts, it seeks to avoid responsibility for payment for those benefits.

In 1962, a study authorized by an Inter-County Drain Committee representing the counties of Macomb, Monroe, Oakland, St. Clair, Washtenaw and Wayne recommended that the City of Detroit's sewage disposal system be expanded to cover the larger metropolitan area. *See, Davis v. City of Detroit*, 98 Mich. App. 705, 709; 296 NW2d 341 (1980). As the court in *Davis* explained, one of the purposes of that recommended system was to address severe water pollution problems resulting from Macomb County's sewage discharges into the Clinton River:

By 1966, increased pollution of the Clinton River prompted the Michigan Water Resources Commission (MWRC) to deny disposal permits. This directly affected Macomb County, which had previously dumped its effluent into the river, and the City of Detroit, as the river emptied into the Great Lakes upstream, polluting the City's raw water intake. Soon thereafter, the City of Detroit entered into a contract with Macomb County to provide sewage disposal with the express goals of serving the public and enhancing the water quality of the Great Lakes.

Id. 98 Mich. App. At 709-710.

Under the contract referenced in *Davis*, and unlike all other customers in the Detroit metropolitan area which financed and constructed their own connections to DWSD's sewerage system, DWSD agree to finance and construct a sewer interceptor system to collect sewage from

Macomb County (along with the Clinton-Oakland sewerage district) and to convey it to Detroit for treatment. As described in a University of Pennsylvania law review article, cited by the Michigan Supreme Court in *Meridian Township v. City of East Lansing*, 342 Mich. 734, 747; 71 NW 234 (1955), DWSD's agreement to construct and finance the Macomb interceptor system enabled the citizens of Macomb County to "enjoy the economic and other advantages of city life without being subjected to all the responsibility of citizens."

The Romeo Arm interceptor that is the subject of this dispute is part of the Macomb Interceptor System and it is utilized solely by Macomb County customers. See Exhibit 1. The Romeo Arm runs south along Garfield Road from the Clinton River to 15 Mile Road, and then turns west along 15 Mile Road until connecting with the Edison Corridor interceptor, which serves both Macomb County and the Clinton-Oakland sewerage district. See Exhibits 1 and 2.

The Romeo Arm was constructed by DWSD between June 1971 and December 1972. See Exhibit A to Keith Swaffer Affidavit, Exhibit 3. It was financed by bonds issued by DWSD, along with state and federal grant funds. Unlike the other suburban customers who themselves financed, built and have maintained their interceptors, the Romeo Arm was built and financed through bonds issued by DWSD, the debt service of which is still being paid by Macomb County. Significantly, all of the debt service on the bonds issued to finance the Macomb interceptor system have been charged solely to Macomb County through DWSD's rates and none has been borne by other users. The Romeo Arm is 11 feet in diameter, and was installed a depth of approximately 60 feet below ground. It was designed to carry between 30-60 million gallons of sewage a day from Macomb County to the City of Detroit for treatment and disposal.

In the early morning hours of Sunday, August 22, 2004, a sinkhole began to form along 15 Mile Road, in Sterling Heights. It was quickly determined that the sinkhole was caused by

damage to the Romeo Arm, located beneath 15 Mile Road. Within hours, the sinkhole expanded to a maximum depth of 30 feet and extended a distance of approximately 245 feet in an east-west direction along 15 Mile Road. DWSD had to act quickly to that growing sinkhole to stabilize it, and then to undertake a full reconstruction. Between August 23, 2004 and March 14, 1005, DWSD designed, contracted for, implemented and completed the full reconstruction of the Romeo Arm. The overall project cost was approximately \$53 million.

NTH Consultants undertook a preliminary evaluation of the cause of the Romeo Arm break. See Exhibit 3A. That evaluation involved, among other things, a review of the subsurface geology in the area of the sewer break, observations and testing of sewer conditions during excavation and repair, and reviews of reports of investigations of prior breaks in the Macomb and Oakland-Macomb interceptors. *Id.* NTH's preliminary conclusion is that the pipe failure occurred as a sudden, catastrophic event, with the affected section breaking away and falling abruptly more than 10 feet into a void created beneath the interceptor. *Id.* That void appears to have been created by the gradual piping of fine soils into fine cracks in the bottom section of the interceptor over an extended period of time, which gradually caused the hardpan to lose the ability to span the sewer pipe. *Id.* When that happened the pipe collapsed downward. *Id.* NTH did not observe any evidence in the failed section of pipe of the types of circumferential cracks that would be indicative of a slowly developing potential pipe failure. *Id.* Those types of cracks were observed in previous failures. Due to the absence of those indicator cracks, the catastrophic nature of the failure, and the high levels of sewage and sewage sludge in the interceptor pipe, Mr. Swaffer concludes that the failure would not have been detected and prevented even with regular inspection of the interceptor. *Id.* The warning signs of a failure would not have been present, or visible.

FINANCING OF THE ROMEO ARM REPAIR

In order to understand how DWSD financed the Romeo Arm repairs, and why it did so in the manner that it did, some explanation of DWSD's financing of its capital improvement projects is required. DWSD employs, and is legally obligated by prior Rate Settlement Agreements to employ, what is referred to as "maximum debt financing" to pay the costs of capital improvements to its sewerage system. Maximum debt financing means using bond proceeds to the maximum extent possible to pay the costs of the expansion, renewal and reconstruction of capital assets. Conceptually, one of the primary purposes of employing maximum debt financing is to avoid the drastic variations in rates that would result if DWSD had to pay the full costs of capital improvements, as incurred, solely through revenues collected through its rates. By spreading the costs of capital improvements over the 25-30 year term of bonds, the magnitude and variability of the financial impacts of DWSD's capital improvement program on its customers is significantly reduced.

Paragraph 6 of the 1982 Rate Settlement Agreement, which amended paragraph 5B of the 1978 Settlement Agreement, directly addresses this issue:

Maximum Debt Financing. Detroit shall obtain capital funds for the expansion, renewal and reconstruction of common use or solely suburban use major capital assets or improvements from the issuance of revenue bonds, to the maximum extent possible together with the maximum use of coverage monies generated thereby. . .

See Exhibit 2 to Macomb County's Brief. Thus, where a capital project needs to be performed, and bond proceeds are available to fund that project, DWSD is obligated to finance that project with bond proceeds. That is precisely what DWSD did with respect to the Romeo Arm repairs.

In 1980, as required by its bond ordinance, DWSD created an Extraordinary Repair and Replacement Reserve Fund ("ERR Fund"). The ERR Fund's creation and its purpose are set out

in the bond ordinance, specifically because it is intended as security for the bond holders. The principal purpose of the ERR Fund was to strengthen the security for bonds sold in December 1980 to finance major improvements to the wastewater treatment plant mandated by the Amended Consent Judgment entered in this case. The concept was to provide additional assurance to bond holders that costs of extraordinary repairs would not impair DWSD's ability to pay bond debt. Thus, the ERR Fund was meant as security to the bond holders to protect their ability to collect debt service on the bonds and to thereby attract purchasers of those bonds. Indeed, under the Official Statement for the 2005 Bonds, the reference to the ERR Fund is under the heading "Security and Sources for Payment of 2005 Bonds." See Exhibit 6, p. 14. The ERR Fund was not intended as a substitute for the maximum bond financing required by the Rate Settlement Agreement. It was not intended to fund capital projects where bond proceeds are available, nor was it intended to pay debt service for bonds used to fund those repairs.

The ERR Fund continues in existence to this date. Pursuant to Section 13.D. of Bond Ordinance No. 27-86, attached as Exhibit 5, DWSD is required to fund the ERR Fund through revenues (after first transferring the necessary revenues into an operations and maintenance fund and debt retirement funds), and maintain an ERR Fund balance equal to 15% of each year's budgeted operations and maintenance expense. The moneys in the fund may be used only to pay costs of major unanticipated repairs or replacement to the sewer system. Monies expended from the fund must be replaced from revenues within 3-5 years.

When the Romeo Arm break was discovered, DWSD was provided an initial repair cost estimate of \$35 million. Upon receiving that estimate, DWSD reviewed both its bond fund account and anticipated fiscal year capital improvements projects, and determined that a sufficient amount of bond funds were available to pay the anticipated repair costs. When the

total cost of the repair increased beyond the initial estimate, DWSD redirected additional bond proceeds from other capital projects to cover those additional costs. DWSD's decision to finance the Romeo Arm repairs through its bond funds was required by the maximum debt financing requirement of the 1982 Rate Settlement Agreement. This also avoided the large rate increase that would have resulted if ERR Funds had been used, which would have had to be replaced through revenues over the succeeding 3-5 years. In sum, by using bond funds the cost of the repairs could be paid off over a 30 year period rather than the 3-5 years required by the bond ordinance for replacement of ERR Funds. Thus, even if the 1982 Rate Settlement Agreement had not required use of bond financing, the decision to use bond funds made financial and economic sense, and lessened the impact on the rate payers.

ARGUMENT

I. STANDARDS FOR PRELIMINARY INJUNCTION

A preliminary injunction is an extraordinary remedy which carries a heavy burden by the movant to show its entitlement to such relief. *Overstreet v. Lexington-Fayette Urban County Gov't*, 305 F.3d 566, 573 (6th Cir. 2002). “[T]he proof required for the plaintiff to obtain a preliminary injunction is much more stringent than the proof required to survive a summary judgment motion.” *Leary v. Daeschner*, 228 F.3d 729, 739 (6th Cir. 2000). Four factors are considered by a court in deciding whether to grant a preliminary injunction: (1) whether, absent injunctive relief, the movant will suffer irreparable harm; (2) the likelihood of movant's success on the merits; (3) whether the injunction would harm others; and (4) whether the public interest would be served by the injunction. *Overstreet v. Lexington-Fayette Urban Co. Government*, 305 F.3d 566, 573 (6th Cir. 2002) (citing *Leary v. Daeschner*, 228 F.3d 729, 736 (6th Cir. 2000)); *The Rock and Roll Hall of Fame and Museum, Inc. v. Gentile Productions*, 134 F.3d 749 (6th Cir 1998).

“The likelihood of success and irreparable harm factors predominate the preliminary injunction inquiry.” (Findings of Magistrate Judge Scheer in *Brighton Optical, et al. v. VSP*, No. 03-74974, Exhibit B, at 11). To obtain a preliminary injunction, plaintiffs must “at a minimum, show serious questions going to the merits and irreparable harm which decidedly outweighs any potential harm to the defendant if the injunction is issued.” *Six Clinics Holding Corp. v. Cafcomp Sys., Inc.*, 119 F.3d 393, 400 (6th Cir. 1997) (internal quotation omitted); *Gaston Drugs, Inc. v. Metropolitan Life Ins. Co.*, 823 F.2d 984, 988 at n.2 (6th Cir. 1987). Further, “A district court is required to make specific findings concerning each of the four factors, unless fewer factors are dispositive of the issue.” *Six Clinics Holding Corporation, II v. Cafcomp Systems, Inc.*, 119 F.3d 393, 399 (6th Cir 1997). In the matter at hand, Macomb County has not, nor can it, demonstrate that a preliminary injunction should be issued. Indeed, as discussed below, Macomb has failed to make any showing of, or even to address, irreparable harm. That alone bars the relief it requests.

II. MACOMB HAS NOT SHOWN THAT IT WILL SUFFER IRREPARABLE HARM ABSENT INJUNCTIVE RELIEF AND ITS FAILURE TO ADDRESS THAT ISSUE IS FATAL TO ITS REQUEST FOR INJUNCTIVE RELIEF.

The United States Supreme Court has recognized that, to obtain a preliminary injunction, the injury resulting in the absence of the injunction must be irreparable, not merely substantial:

‘The key word in this consideration is irreparable. Mere injuries, however substantial, in terms of money, time and energy necessarily expended in the absence of a stay, are not enough. The possibility that adequate compensatory or other corrective relief will be available at a later date, in the ordinary course of litigation, weighs heavily against a claim of irreparable harm.’

Sampson v. Murray, 415 U.S. 61, 90 (1974) (quoting *Virginia Petroleum Jobbers Ass’n v. Federal Power Commission*, 259 F.2d 921 (U.S. App. D.C. 1958)).

In order to obtain a preliminary injunction, a plaintiff must always demonstrate that if the preliminary injunction is not granted, the plaintiff will suffer irreparable harm before a decision on the merits can be rendered. *Michigan Coalition of State Employee Unions v Michigan Civil Service Comm’n*, 465 Mich 212, 225 (2001) (“**a particularized showing of irreparable harm was, and still is, as our law is understood, an indispensable requirement to obtain a preliminary injunction.**”); *Barber ex rel. Barber v. Dearborn Public Schools*, 286 F.Supp.2d 847 (E.D.Mich. 2003) (“Before a preliminary injunction may issue, however, a plaintiff must *always* demonstrate some irreparable injury that necessitates the injunction.) (emphasis in original) (citing *Neveux v. Webcraft Tech., Inc.*, 921 F.Supp. 1568, 1570-71 (E.D. Mich. 1996)); (“The purpose of a preliminary injunction is always to prevent irreparable injury and to preserve the court’s ability to render a meaningful decision on the merits,” (emphasis added.) *United Food Commercial Workers Union, Local 1099 v. Southwest Ohio Regional Transit Authority*, 163 F.3d 341, 348 (6th Cir 1998). Moreover, “‘a plaintiff’s harm is not irreparable if it fully compensable by money damages.’” *Cellnet Communications, Inc. v. New Par*, 292 F.Supp.2d 565 (E.D. Mich. 2003) (quoting *Basicomputer Corp. v. Scott*, 973 F.2d 507, 511 (6th Cir. 1992).

Macomb County’s brief wholly fails to make a showing of irreparable injury. In fact, it does not even address that element of injunctive relief. Although it cites case law which lays out the four factors to be addressed in deciding whether an injunction will issue, it only addresses the likelihood of success on the merits, the relative harm and the public interest. Its utter failure to make any showing on this crucial element of injunctive relief is telling and fatal to its motion. For this reason alone, Macomb’s Motion and Brief for Preliminary Injunction should be denied.

In any event, Macomb County cannot make the required showing of imminent irreparable injury, because this dispute is exclusively over money. Macomb County asks this Court enjoin

lawfully adopted and presumptively valid rates that became effective as of July 1, 2005, in which it is appropriately allocated the amortized cost of the repair of the Romeo Arm interceptor. Payment of the lawfully adopted approved rates simply cannot result in irreparable harm to Macomb County. In the unlikely event that Macomb were to succeed in the ordinary course of litigation, any adjustment to its rate could conveniently be implemented through the look-back process that DWSD has employed for many years and continues to employ in retrospectively adjusting rates for, *inter alia*, customers who are determined to have overpaid in a prior rate period. If Macomb were to lose, the status quo would remain.

Conversely, however, if the Court were to grant the preliminary injunction, and Macomb County ultimately lost, the rates of all customers, not just Macomb's customers, would be affected and would have to be adjusted. Moreover, granting the requested preliminary injunction would essentially grant the relief Macomb is seeking, without its having made the necessary showing for such relief. Because Macomb County's alleged injury is entirely monetary, no irreparable harm can be shown.

III. MACOMB COUNTY CANNOT SHOW AND HAS NOT SHOWN A LIKELIHOOD OF SUCCESS ON THE MERITS OF ITS CLAIMS.

A. Macomb County Cannot Prevail on Its Claim That DWSD's Allocation To It Of The Costs To Repair the Romeo Arm Interceptor Is Arbitrary, Capricious Or Unreasonable Because It is Wholly Consistent With and Required by DWSD's Long Established Rate Making Practices, DWSD's Contract With Macomb County And Prior Rate Settlement Agreements.

There are certain fundamental principles that govern judicial review of municipal ratemaking issues such as the ones presented here. To begin with, under governing Michigan ratemaking law, "the fixing of such rates is a legislative matter with which the courts will not interfere unless the *plaintiff* shows that the rate determination was arbitrary, capricious or unreasonable." *City of Plymouth v. City of Detroit*, 423 Mich. 106, 1033; 377 NW2d 689

(1985)¹ (Emphasis by the Court). The arbitrary and capricious standard is the most deferential standard of review of agency action and mandates upholding all outcomes supported by a reasoned explanation based upon evidence in the records as a whole. *Michigan Bell Telephone Co. v. MCI Metro Access Transmission Services, Inc.*, 323 F.3d 348, 354 (6TH Cir. 2003).

Michigan courts accord “great deference” to legislatively authorized ratemaking authorities when reviewing the validity of municipal utility rates. *City of Novi v. City of Detroit*, 433 Mich. 414, 425-426 (1889). Additionally, a rate lawfully established presumed to be reasonable. *City of Detroit v. City of Highland Park*, 326 Mich. 78, 100 (1949). Thus, in order to prevail, Macomb County must satisfy a heavy burden of proving that DWSD’s presumptively reasonable decision to allocate the costs of the Romeo Arm Interceptor repair to Macomb County was arbitrary, capricious or unreasonable. For the reasons outlined below, Macomb County is unlikely to carry its heavy burden of showing that DWSD’s allocation of the subject repair costs is arbitrary or capricious because such allocation is consistent with and, indeed, mandated by DWSD’s long established ratemaking practices, the Wastewater Disposal Agreement between DWSD and Macomb County and the 1978 Settlement Agreement.

The March 6, 1967 Wastewater Disposal Agreement between DWSD and Macomb County (“Macomb Contract”) provides, in pertinent part, that: (a) the rates DWSD charges Macomb County for sewage treatment services “shall be uniform throughout the entire Detroit Wastewater Disposal system;” and (b) “the rates shall always be reasonable in relation to the costs incurred by BOARD for providing this service.” See, Macomb Contract, paragraph 9, attached as Exhibit 1 to Macomb County’s Brief. This provision of the Macomb Contract

¹ Concepts of “negligence” have no role in the review of municipal ratemaking and, as explained below, nor do questions of prudence of investment play any such role.

consistently has been interpreted and applied to mean that DWSD must charge Macomb County for the costs incurred in provided wastewater treatment and sewerage services to Macomb County and uniformly charge all other customers (and not Macomb) the cost of providing service to such customers.

For more than a quarter century, DWSD's wastewater treatment rates have been bottomed upon the fundamental principle that costs associated solely with service provided to residents of the City of Detroit are paid solely by Detroit ratepayers, and costs associated solely with suburban service provided to suburban customers are paid solely by suburban ratepayers. Based on this principle, since the Macomb Interceptor was constructed, its costs have been charged solely to Macomb County. The May 1, 1978 Report and Recommendations of the Masters, prepared in connection with earlier rate litigation before the Court, acknowledged this fundamental principle:

The first step in developing user charges . . . is to determine whether distinguishable customer classifications should be developed to reflect the fact that distinguishable costs are incurred in serving different classes of customers. Detroit has developed several different classes of customers. No challenge has been addressed to the propriety of the classes it has developed. Thus, as a matter of illustration, all parties agree that it is proper for Detroit to set rates on the assumption that Detroit customers should pay the costs of the local sewer system that provides individual service to individual customers in Detroit, and that suburban customers should not pay any part of those costs. So too, it is agreed that individual Detroit customers should not bear any portion of the costs of the Oakland-Macomb interceptor, a large interceptor sewer constructed by Detroit to gather sewage flow from points in Oakland and Macomb County.

See Exhibit 4

In 1978, the parties to the then-pending rate litigation, including DWSD and Macomb, Oakland and Wayne Counties, entered into a Settlement Agreement resolving the various issues

raised in that litigation. The 1978 Settlement Agreement is attached as Exhibit 7 to this Brief. Those issues included the question of cost allocation among customers of the DWSD system. Paragraph 5.D. of the 1978 Settlement Agreement, p. 12, provides as follows:

Uniform Allocation of Costs Incurred. The recovery of costs incurred by the system shall be accomplished through the institution of rates which assign, allocate and apportion such costs to all ratepayers on the basis of principles uniformly applicable to all, it being the intention of the parties that such rates . . . will, as nearly as practical, recover from each customer class the costs of providing service regardless of the ratepayers location.

Thus, consistent with the requirements of the Macomb Contract, the 1978 Settlement Agreement, which remains binding on all parties thereto, requires DWSD's rates to recover from each customer class the cost of providing service to such class.² This is also consistent with established law, which forbids charging users for services provided to others. See *Bolt v. City of Lansing*, 459 Mich 152,; 587 N.W.2d 264 (1998); *City of Novi v. City of Detroit*, 433 Mich. 414; 446 N.W. 2d 118 (1989). See, also, Section 4f of the Home Rules Cities Act which requires that municipal sewage rates be based on the cost of service and be set at a level "...covering the cost of the service." M.C.L. 117.4f(d).

Here, it is undisputed that the subject interceptor provides service only to Macomb County. Under the long established and legally binding cost of service ratemaking principle described above, it is appropriate, necessary and legally required for DWSD to allocate all costs of such interceptor to Macomb County and, DWSD is forbidden to pass those costs on to any other customers. Therefore, Macomb County has little likelihood of success on a claim that

² Federal law also requires DWSD to implement a "user charge system" that assesses costs of operation, maintenance and replacement of its system based on the use of the system by each user or user class. See 40 C.F.R. §§ 35.929-1 through 35.929-3.

DWSD has acted in an arbitrary, capricious or unreasonable way in allocating the subject costs of repair solely to Macomb County.

Macomb County argues that the allocation to it of the costs of repairing the Romeo Arm is inconsistent with a “policy” that supposedly was “adopted” by the Detroit Board of Water Commissioners during its February 6, 1980 meeting, as well as with the 1982 Rate Settlement Agreement. Contrary to Macomb County’s argument, the minutes of the Board’s meeting do not reflect the adoption of a binding policy, nor even a ratemaking concept of any applicability to the matters at hand. The matter discussed at that meeting involved the allocation of costs of repairing the Edison Corridor interceptor. Unlike the Romeo Arm interceptor at issue here, the Edison Corridor interceptor serves both Macomb County and the Clinton-Oakland sewerage district. While the minutes of the February 6, 1980 Board meeting reflected the expression of a “sense” of the Board with respect to allocating to all customers (i.e., on a “common to all” basis) all extraordinary costs incurred in repairing major sewerage infrastructure, to the best knowledge of DWSD, that “sense” of the Board was never incorporated into a binding ratemaking policy. In addition, whatever the sense of the Board may have been in 1980, that sense is irrelevant to the cost allocation issues presented here. To begin with, this alleged policy dealt with damage to an interceptor that served more than one customer, and arguably could be construed to be consistent with DWSD’s policy of allocating costs of facilities that serve multiple customers on a common to all basis. The Romeo Arm sewer at issue here serves only Macomb County.

In June 1982, the parties to rate litigation pending before the Court at the time entered into a Settlement Agreement (“1982 Settlement Agreement”) that resolved the allocation of the Edison Corridor repair costs. The 1982 Settlement Agreement is attached as Exhibit 2 to Macomb County’s Brief. That allocation did not allocate those costs fully on a common to all

basis, but rather shifted to Wayne County only 40% of what otherwise would have been its share of those costs, if allocated fully on a common to all basis. That allocation demonstrates that the Board's statements at the February 6, 1980 meeting were never adopted as a binding policy.

This conclusion is unambiguously confirmed by paragraphs 5 and 13 of the 1982 Settlement Agreement. Paragraph 5 provides, in pertinent part: "No agreement is herein made as to any costs attributable to any subsequent or subsequently discovered failure of the Oakland-Macomb interceptor." Paragraph 13 of that agreement provides, in pertinent part:

It is expressly understood and agreed that the matters hereby agreed to are in compromise of the disputes among and between the parties. Except as expressly set forth herein, nothing contained in this Settlement Agreement shall govern future ratemaking or constitute evidence in any subsequent proceeding regarding the reasonableness of said Rates. No party, by execution hereof, acknowledges the correctness of the methodology used in deriving the Rates or the positions or claims asserted by others. Subject to the provisions of Items 3, 5 [with respect to allocation of the Edison Corridor repair costs] and 6 hereof, which are continuing obligations, Detroit and DWSD expressly preserve, unimpaired by this Settlement Agreement, the right to adopt sewage treatment rates and charges in the future pursuant to the authority vested in them by virtue of state law, and the Charter of the City of Detroit. . .

Thus, the "policy" Macomb County claims to rely upon to support its assertion that the Romeo Arm repair costs should be allocated as common to all costs: (a) was never adopted as a formal Board policy; (b) was related to a facility that served more than one customer and not to facilities serving only one customer; (c) was never incorporated into the 1982 Settlement Agreement; and (d) to the extent partially incorporated into that Agreement, was expressly made non-binding on future ratemaking by the terms of paragraphs 5 and 13 of that Agreement. Finally, that supposed policy is belied by the approval of the rate structure with respect to the repairs at issue here, which the Board approved be allocated solely to Macomb County. Thus, the "policy" of the Board has been deemed by the Board not to apply here. For these reasons,

Macomb County is unlikely to prevail on its claim that DWSD is prohibited by prior Board policy and/or the 1982 Settlement Agreement from allocating the costs of repairing the Romeo Arm Interceptor solely to Macomb County.

B. Macomb County Cannot Prevail On Its Claims Because They Are Barred By Governmental Immunity.

Macomb County attempts to avoid DWSD's governmental immunity by casting its claims in ratemaking terms (i.e., the inapplicable "prudent investor" rule and a claim for breach of contract). Its claims, however characterized by Macomb County, are nothing more than a tort claim for damages resulting from DWSD's alleged negligence in the operation of its sewerage system. They are no different from a claim that an owner of a sewer might bring for damage to such sewer by a negligent act of DWSD that caused the owner to incur the cost of repair and, consequently, higher costs of disposing its sewage. As the Court previously ruled in *Elsag Bailey, Inc. v. City of Detroit*, 975 F. Supp. 981 (E.D. Mich. 1997), because DWSD's operation of its sewerage system is a government function, DWSD is immune from common law tort liability under Michigan's governmental immunity statute.

See, also City of Detroit v. Michonski v. Department of Transportation, 162 Mich. App. 485, 413 N.W.2d 438 (1987) (emphasis added) (quoting *Furness v. Public Service Comm.*, 100 Mich. App. 365, 370, 299 N.W.2d 35 (1980) (finding that despite a plaintiff's attempt to characterize a claim as something other than negligence, if the gravamen of the claim sounds in negligence, governmental immunity would apply):

Here, we agree with the trial court that Count III sounds in negligence. Plaintiff has basically alleged that defendant failed to inspect and maintain the light pole. While it is true that plaintiff alleges that defendant knowingly and intentionally failed to do these acts, we do not find that these conclusory terms alter the fact that the underlying allegation is one of negligence . . . The gravamen of these allegations is that defendants were negligent in failing to correct a known danger (nuisance). **This alleged**

conduct is omissive rather than commissive and would therefore fall within the category of a negligent nuisance. As such it remains protected from suit by governmental immunity.

C. Macomb County Cannot Prevail On Its Claim That DWSD Violated The Prudent Investment Rule Where That Rule Is Inapplicable to DWSD Rates And, In Any Event, Does Not Obviate The Heavy Burden Macomb County Bears To Overturn The Rate Determination by DWSD and The Presumption Of Validity.

1. The Prudent Investment Rule Arises From Laws Regulating Public Utilities To Protect Investors' Return On Their Investments; It Does Not Apply To A Municipal Utility, Such As DWSD, Which Obtains No Return on Its Sewage Rates.

To try to avoid its responsibility for the costs of repairing the interceptor that only its residents utilize, and its obligations under its contract with DWSD, the 1978 Rate Settlement Agreement and existing law, Macomb County cites to the inapplicable prudent investment rule and numerous cases that allegedly applied that rule in Michigan and other jurisdictions. Macomb County argues that application of that rule here should prevent DWSD from assigning the cost of the repairs of the Romeo Arm interceptor to the customer (Macomb) that solely benefited from such repairs. Macomb's argument is without merit for a number of reasons.

First, the prudent investment rule does not apply to a municipally owned utility such as the DWSD. Rather, the so-called prudent investment rule has been applied exclusively to rates charged by privately owned utilities to address the proper balance between the interests of ratepayers and the return earned by the utility's shareholders. Because DWSD does not have shareholders who earn a return on investment in its wastewater treatment rates, the very rationale for the prudent investment rule is absent. .

Second, the prudent investor rule and the cases on which Macomb County relies exclusively address regulated rates of investor owned public utilities -- *i.e.*, rates that require approval by a state public service commission or other, similar, regulatory body. In Michigan as

in other states, however, rates charged by municipally owned utilities such as DWSD are specifically excluded from such regulation. M.C.L. 460.6.

Third, the prudent investment rule, even where it may be applied, is not mandated, but is simply one of a number of methods which can be used to determine if the rates set by a utility are reasonable. Other methods are also considered appropriate as well, including the cash basis method utilized by DWSD, and the utility basis method, which by statute, DWSD must use for its water rates.

Finally, even if the prudent investment rule applied, Macomb County would still have the burden of showing that DWSD's rate determination was arbitrary, capricious or unreasonable, and would have to overcome the presumption of validity accorded such determination. See Section III A above. In sum, Macomb County cannot avoid the standard applicable to DWSD's conduct in setting rates by citing to an inapplicable rule.

Michigan has not and does not apply the prudent investment rule to a municipal utility. Although the Michigan Public Service Commission has, on occasion, applied the prudent investment rule in determining public utilities' "just and reasonable rates,"³ the rule has never been applied to a utility that is exempt from Commission regulation. Similarly, none of the other

³ Public utility ratemaking is a legislative function, which by statute, the Legislature has delegated to the PSC. M.C.L. § 460.6; *Attorney General v Michigan Public Service Comm.*, 136 Mich App 790, 350 N.W.2d 320 (1984). The PSC has a statutory duty to provide just and reasonable utility rates. *Building Owners & Managers Ass'n of Metropolitan Detroit v. Public Service Comm.*, 424 Mich. 494, 510, 383 N.W.2d 72 (1986).

However, the courts have recognized that the "PSC is not bound by any particular method or formula in exercising its legislative function to determine just and reasonable rates." *Association of Business Advocating Tariff Equity v. Michigan Public Service Comm.*, 208 Mich. App. 248, 527 N.W.2d 533 (1994) (citing *Building Owners & Managers Ass'n of Metropolitan Detroit*, 424 Mich. at 510; *Michigan Bell Telephone Co. v. Public Service Comm.*, 332 Mich. 7, 36-37, 50 N.W.2d 826 (1952)). Indeed, the "PSC may consider 'all lawful elements' in determining rates." *Association of Business Advocating Tariff Equity*, 208 Mich. App. at 540 (citing M.C.L. § 460.557).

jurisdictions referenced by Macomb County applied that rule to municipally owned utilities. They have, rather, limited its application to investor-owned public utilities. The reason for this limited application of the rule is simple. The rule is designed to address both the private investors' rights to a just and reasonable rate of return on their investment and to prevent unwarranted profits by a regulated investor-owned utility. Such considerations are not present here, where DWSD has no investors and does not earn a return on wastewater treatment rates.

All of the cases cited by Macomb arise out of the public utility arena. The majority of the cases involve the entirely distinguishable situation of a privately owned public utility's attempt to recoup the costs associated with a failed nuclear plant.⁴ The limited number of cases cited by Macomb that do not involve a nuclear plant are also distinguishable because (i) the opinions discuss a public utility's challenge against a public service commission (rather than a customer's challenge against a municipality), and (ii) the opinions have no bearing on the appropriate methodology for municipalities in setting sewerage treatment rates.⁵

⁴ *Gulf States Utilities Co. v. Louisiana Public Service Comm.*, 578 So. 2d 71, 85, n6 (La. 1991), cert denied, 502 U.S. 1004 (1991) (Public utility sought to enjoin order of Public Utility Commission limiting it to first year return and finding restart of nuclear plant imprudent); *Georgia Power Co. v. Georgia Public Service Comm.*, 396 S.E.2d 562, 569 (Ga. Ct. App.), cert denied 1990 Ga. LEXIS 483 (Oct. 23, 1990) (Public utility challenged Public Service Commission's determination denying in part request for rate increase to recoup its share of investment in nuclear plant); *Re Union Electric Co.*, 66 P.U.R. 4th 202 at 214 (1985) (Public utilities proposed rate increase for nuclear plant); *Association of Businesses Advocating Tariff Equity v. Michigan Public Service Comm.*, 208 Mich. App. 248, 527 N.W.2d 533 (1994), lv denied 450 Mich. 890 (1995) (Public utility challenged Public Service Commission's determination denying in part request for rate increase to recoup its share of investment in nuclear plant); *Entergy Gulf States, Inc. v. Public Utility Comm. Of Texas*, 112 S.W.3d 208 (Tex. App. 2003, petition for review den., 2004 Tex. LEXIS 795 (Sept. 10, 2004) (Public utility challenged Public Service Commission's determination denying in part request for rate increase to recoup its share of investment in nuclear plant); *In Georgia Power Co. v Georgia Public Service Comm.*, 396 S.E.2d 562, 565 (Ga. Ct. App. 1990), cert. den., 1990 Ga. LEXIS 483 (Ga. Oct. 23, 1990) (Public utilities request for rate increase to recoup its share of approximately \$6.3 billion investment in nuclear plant).

⁵ *In re Detroit Edison Co.*, 24 P.U.R. 4th 362 (Mich. Pub. Svc. Com.) (1978) (Without discussing the prudent investment rule whatsoever, PSC reduced proposed rate increase by approximately 30% because public utility failed to meet its burden in showing that its decision to

Village of Niles, et al v. City of Chicago, 558 N.E.2d 1324 (Ill. App. 1990), although decided under Illinois law, is instructive. There, suburban communities of Chicago sued for injunctive and other relief challenging water rates charged to them as excessive and unreasonable. They argued, *inter alia*, that the “utility basis” method used by Chicago to set those rates failed to consider total revenue requirements of the system, and further, “bad management” of the city resulted in plaintiffs’ subsidizing other users in the system. The plaintiffs argued that, instead, the rates should be set and considered under the “original cost/prudent investment” rule. The Court rejected their argument. In its decision, among other things, the Court pointed out that the original cost/prudent investment cases arose out of the Illinois Public Utilities Act, from which municipally owned utilities are excluded. A similar situation exists under Michigan law. M.C.L. 460.6. The *Niles* court found:

No statute specifies which rate calculation method is preferable for use by municipalities in setting water rates. Illinois courts consistently have held that utility rates should include a reasonable return on the basis of the fair value of the utility property . . . [the *Union Electric* court] rejected the argument plaintiffs make here, that the “original cost/prudent investment” method should be adopted in Illinois . . . The *Union Electric* court explained that the fair value of public utility property is a “value” concept, not a cost concept which reflects the amount of capital invested. 77 Ill.2d at 377, 33 Ill.Dec. at 127, 396 N.E.2d at 516.

We are not persuaded to ignore *Union Electric*’s rationale in favor of plaintiffs’ position in this case.

install a flue gas conditioning system was reasonable); *Union Carbide Corp. v. Public Service Commission*, 431 Mich. 135, 149; 428 N.W.2d 322 (1988) (PSC exceeded its statutory authority by ordering public utility to stop operating Karn oil-fired generating plants and to limit acceptance of oil deliveries under contract with Union Carbide); *Consumers Power Co. v. Mich. Pub. Svc. Comm.*, 196 Mich. App. 687, 493 N.W.2d 494 (1992) (Costs associated with public utility’s settlement of breach of contract suit could not be included in rates to consumers); *Iowa-Illinois Gas and Electric Co. v. Iowa State Commerce Comm.*, 412 N.W.2d 600, 603-04 (Ia. 1987) (Applying the “used and useful” rule and a “zone of reasonableness” rule, rather than the prudent investment rule); *Entergy Gulf States, inc. v. Louisiana Public Service Comm.*, 726 So. 2d 870, 880 (La. 1999) (Disallowing fuel adjustment for outages and refueling outage because outages were not caused by “human error”).

Id. at 1333 (citing *Union Electric Co. v. Illinois Commerce Comm’n*, 396 N.E.2d 510 (1979)). Thus, *Niles* found that the utility basis of rate setting used by Chicago was proper and it rejected use of the prudent investment rule. Likewise, here DWSD uses the cash basis method (see Exhibit 4) in establishing its rates, which is also a proper method of rate setting. The basis for the prudent investment rule – to not only protect the rate of return expected by the investors but to also prevent unwarranted profiting by the utility, is simply not present here where DWSD obtains no return. The prudent investment rule, accordingly, does not apply.

2. Even If It Applied, The Prudent Investment Rule Is Merely One Rule A State May Apply When Regulating Whether A Privately Owned and Operated Utility Should Be Permitted to Recover The Cost of A Particular Asset, and Its Application Is Discretionary.

Because a public utility’s assets, unlike the City of Detroit, are owned and operated by private investors, the “partly public, partly private status of the utility creates its own set of questions under the Takings Clause of the Fifth Amendment. The guiding principle has been that the Constitution protects utilities from being limited to a charge for their property serving the public which is so ‘unjust’ as to be confiscatory.” *Duquesne Light Company v. Barasch*, 488 U.S. 299, 307 (1989) (citing *Covington & Lexington Turnpike Road Co. v. Sanford*, 164 U.S. 578, 597 (1896)). The fundamental issue in this approach is to evaluate the risk that investors expect given the risk of the enterprise, and to protect against public utilities’ taking advantage of their monopoly position to earn unwarranted returns. As the Supreme Court aptly described it in *Duquesne*:

(“A public utility is entitled to such rates as will permit it to earn a return ... equal to that generally being made at the same time and in the same general part of the country on investments in order business undertakings which are attended by corresponding risks and uncertainties.”); *Bluefield Water Works & Improvement Co. v. Public Service Comm’n of West Virginia*, 262 U.S. 679, 692-693; 43 S.Ct. 675, 679, 67 L.Ed. 1176 (1923). The risks a utility faces are in large part defined by the rate methodology because utilities

are virtually always public monopolies dealing in an essential service, and so relatively immune to the usual market risk. Consequently, a State's decision to arbitrarily switch back and forth between methodologies in a way which required investors to bear the risk of bad investments at some times while denying them the benefit of good investments at others would raise serious constitutional questions.

Duquesne, 488 U.S. at 314-315. These same concerns are clearly not present here, where DWSD obtains no rate of return on its wastewater treatment rates.

In any event, even where the prudent investment rule is applicable, its use is not mandated. Instead, in response to the Constitutional concern about reasonable rates of return to investors, courts have applied various tests, including the backward-looking "prudent investment" rule, and the forward-looking "fair value" or "used and useful" rule. *Id.* at 309. Whether a state applies the prudent investment rule, the fair value rule, or a some hybrid version of the rules is completely within the discretion of the state. "[T]o declare that a particular method of rate regulation is so sanctified as to make it highly unlikely that any other method could be sustained would be wholly out of keeping with this Court's consistent and clearly articulated approach to the question of the Commission's power to regulate rates. It has repeatedly been stated that no single method need be followed by the Commission in considering the justness and reasonableness of rates." *Id.* at 316 (citing *Wisconsin v. FPC*, 373 U.S. 294, 309 (1963)).⁶ Indeed, under Michigan law, it is well established that the public service commission is "not bound by any particular method or formula in exercising its legislative function to determine just and reasonable rates." *Association of Business Advocating Tariff Equity v. Public Service Commission*, 208 Mich. App. 248,; 537 N.W. 2d. 533, 539-540 (1994), citing to *Building*

⁶ "For example, rigid requirement of the prudent investment rule would foreclose hybrid systems . . . [i]t would also foreclose a return to some form of the fair value rule just as its practical problems may be diminishing." *Duquesne Light Company*, 488 U.S. at 316, n.10.

Owners & Managers Ass'n of Metropolitan Detroit v. Public Service Comm., 424 Mich. 494, 510; 383 N.W. 2d 72 (1986); *Michigan Bell Telephone Co. v. Public Service Comm.*, 332 Mich. 7, 36-37; 50 N.W.2d 826 (1952). Thus, even if the prudent investment rule was applicable to municipally owned utilities, its use is not mandated by DWSD in setting its rates. Finally, the prudent investment rule does not, and cannot, overcome the presumption in favor of the rate determination, and the heavy burden Macomb County faces in overturning DWSD's reasonable ratemaking decision to allocate the costs of the subject repair to the only customer benefiting from that repair. See Section III A.

D. Macomb County Cannot Prevail On Its Claim That DWSD Is Obligated To Indemnify It For the Cost of The Repairs.

Macomb County also claims, without support, that it is entitled to indemnity from DWSD for the costs of the repair of the Romeo Arm interceptor, citing to its paragraph 21 of its sewerage treatment contract with DWSD, Exhibit 1 to its Brief. However, paragraph 21 of the DWSD and Macomb County Contract clearly only applies to damages arising from the **construction** of wastewater disposal facilities. It reads, in pertinent part:

21. The COUNTY shall assist the BOARD to obtain permission to use streets, highways, alleys, and/or easements in the municipalities within the DISTRICT for the purpose of constructing, maintaining, and operating wastewater disposal facilities. ... In the event of such construction, the BOARD shall request the COUNTY and municipalities within the DISTRICT to execute such separate instruments granting rights-of-way in its streets, highways, and alleys as may be reasonably required by the BOARD. **The BOARD shall restore all existing structures and/or improvements lying in the right-of-way of construction, to as good a condition as before the construction took place, and shall save harmless the COUNTY and municipalities therein from any and all liability, claims, suits, actions, or cause of action for damages for injuries, including death, or otherwise by reason of the construction work herein above provided for** "Provided that nothing in this section or in this agreement shall be construed to render the BOARD liable for acts of negligence by the COUNTY or any municipalities therein or any of their individual officers, employees or agents". Exhibit 1 to Macomb County's brief, paragraph 21.

Thus, any reading of the indemnity would conclude it runs only to harm caused by the actual construction activities themselves. It is inapplicable to Macomb County's claim that the cost of repairs for the interceptor are the result of negligence or breach of contract by DWSD. In addition, under the common law of indemnity, indemnity is triggered only by third party claims against the indemnitee, not by the claims of the indemnitee. "In the typical situation, the party who is entitled to indemnity . . . is vicariously liable for the negligence of another." *Prosky v. National Acme Company*, 404 F.Supp. 852, 855 (E.D.Mich.1975). "Michigan law provides for indemnity 'only when the charging party can prove that it has been found liable to a third party....'" *Douglas v. Robbins & Myers, Inc.*, 505 F.Supp. 765, 769 (W.D.Mich 1980) (quoting *Jorae v. Clinton Crop Service*, 465 F.Supp. 952, 957 (E.D.Mich 1979)). Thus, even if this indemnity paragraph applied here, it would only be triggered by a third party claim against Macomb County not by a direct claim by Macomb County against DWSD.

IV. MACOMB COUNTY CANNOT AND HAS NOT SHOWN THAT THE RELATIVE HARM FROM AN INJUNCTION IS LESS THAN THE HARM IF ONE IS ISSUED.

Macomb County claims that its customers will face a "drastic" charge for the cost of the Romeo Arm interceptor repairs should the approved rates apply effective as of July 1 and advises this Court that spreading the cost among all users or utilizing the ERR Fund is of little harm. This argument is without merit. First, as discussed above, the ERR Fund cannot be utilized for that purpose. Its purpose is not to cover debt service, and it is to be utilized only when bond monies are not available, for emergency repairs. Second, because its funds have to be replaced within 3 to 5 years, and it is generated by monies from all customers, utilizing the ERR Fund essentially means that the cost is being spread to all users, and that the favorable amortization of the costs of repair over 30 years will be lost, at least to the extent the ERR Fund is utilized to pay that debt service on the bonds. The harm to other users, and the financial impact is significant.

Moreover, Macomb County's claim that if it wins it will be entitled to a refund does not support the argument that the relative harm to Macomb outweighs the harm to other customers of DWSD. If the costs of the repair are spread to other customers, whether through a rate increase or by utilizing the ERR Fund, and Macomb does not prevail here, instead of the look back refund/credit due solely Macomb County customers, DWSD will be forced to re-adjust and apply the look back to its other customers as well, and have a corresponding greater increase of rates to Macomb County customers for the previous underpayment by them. This is a much more onerous result. It also affects, negatively, far more ratepayers.

Finally, Macomb County's claim that the rate increase this year is "drastic" is unsupported and inaccurate. As evidenced by the affidavit of Bart Foster, Exhibit 8 hereto, and its Exhibit B, the effect on Macomb County customers this year is an increase of only 8.3%, without considering the credit they are receiving for the look back adjustment from the prior year's payments. See Exhibit 8B. Considering that look back brings the net effect down to 5.1%. That is the net increase which Macomb County customers will see in their bills. This is well within the rate increases other customers have faced, and certainly not "drastic."

V. THE PUBLIC INTEREST IS SERVED BY DENIAL OF INJUNCTIVE RELIEF.

As discussed at more length above, Macomb County's failure to make any showing it would suffer irreparable harm without injunctive relief means that the public interest is served by denial of such relief. It is not in the public interest to grant such extraordinary relief in the absence of the strict showing required. Moreover, in the light of the longstanding principles of setting rates commensurate with the services provided, the provisions of the Macomb County contract with DWSD which require same, the provisions of the 1978 Rate Settlement Agreement which also require that a service that solely benefits one set of customers be paid for by that set of customers, and the harm which would result if the ERR Fund instead of the favorable terms of

the debt service under bond financing were utilized to pay for the repairs, the public interest clearly favors denial of the relief requested by Macomb County.

CONCLUSION

A preliminary injunction is an extraordinary remedy which should be granted only if the movant carries his or her burden of proving that the circumstances clearly demand it. *Overstreet*, 305 F.3d at 773. Macomb County has not met its burden here. The requested preliminary injunction should be denied.

Respectfully submitted:

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Dated: August 1, 2005

CERTIFICATE OF SERVICE

I hereby certify that on August 1, 2005, I electronically filed the foregoing paper with the Clerk of the Court using the ECF system which will send notification of such filing to the following: **G. Christopher Bernard, Kurt M. Brauer, Peter A. Caplan, Annette M. Lang, Robert A. Marzano, Mils T. Macik, Patrick B. McCauley, Barry A. Seifman, and Kenneth A. Slusser.**

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- Ex. 3-A Memorandum Re: Preliminary Sinkhole Evaluation Romeo Arm Oakland-Macomb Interceptor, 15 Mile Road between Moravian and Hayes, Sterling Heights, Michigan dated June 30, 2005
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- Ex. 4 May 1, 1978 Report and Recommendations of the Masters
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EXHIBIT 1

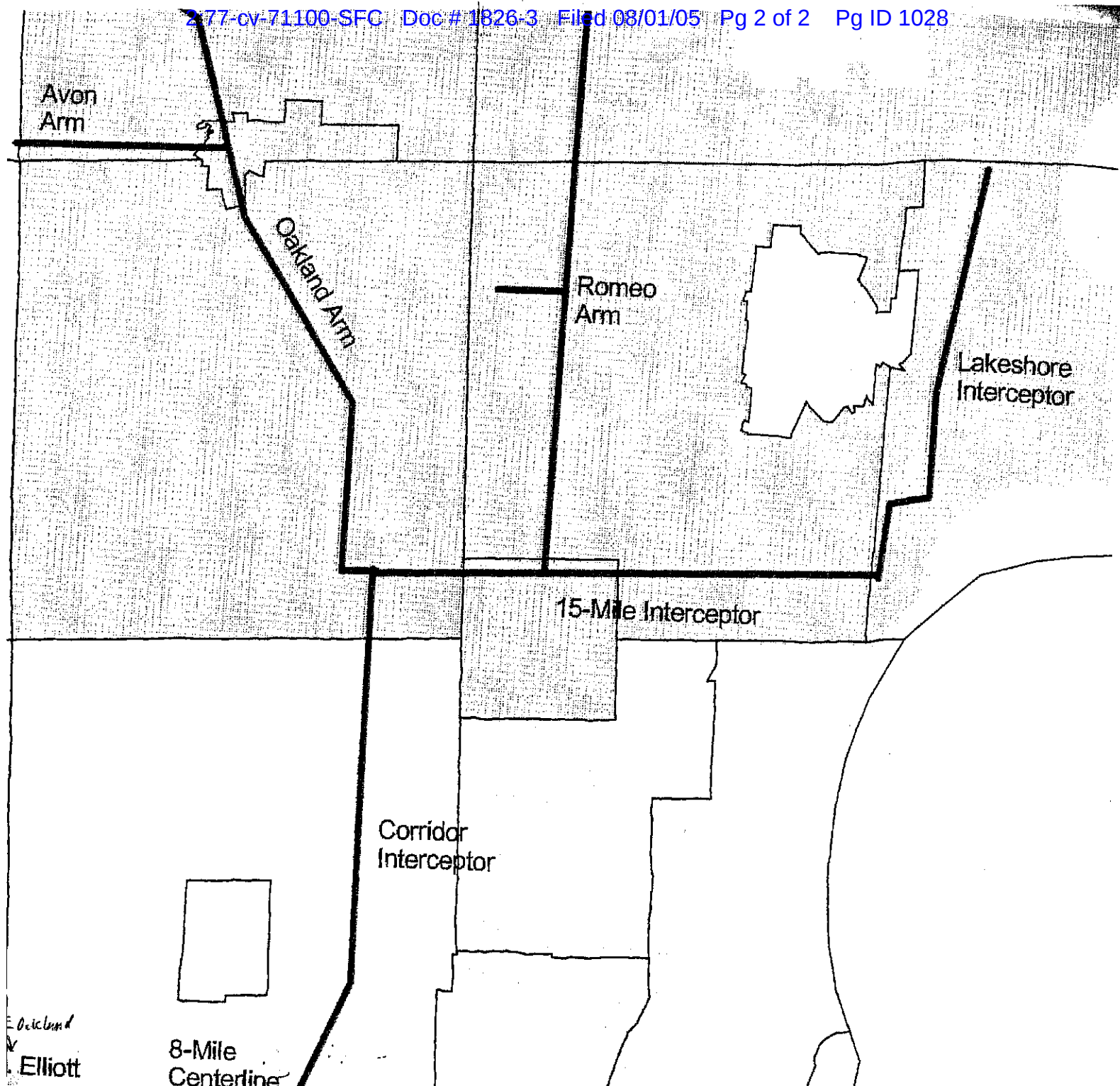


EXHIBIT 2

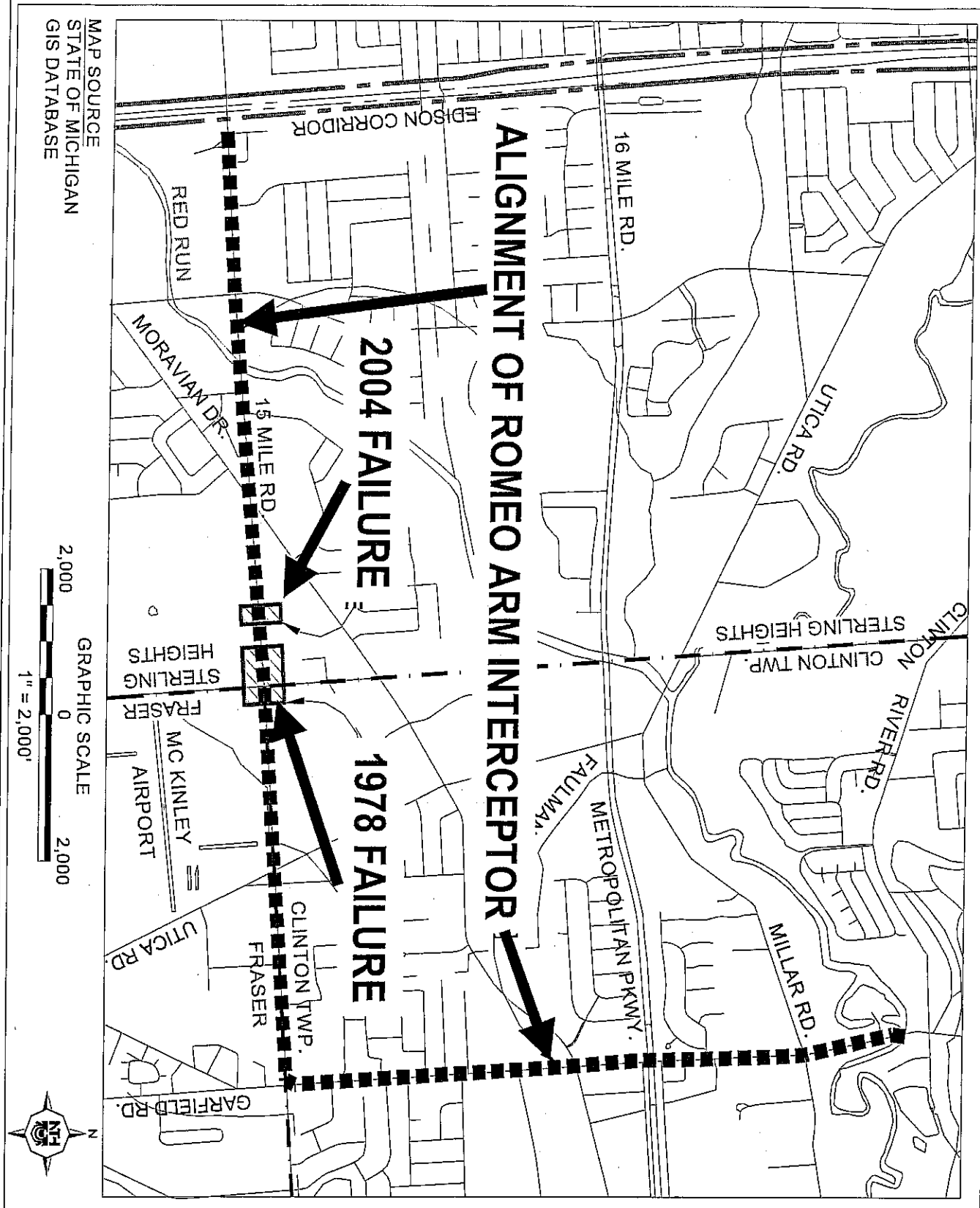


EXHIBIT 3

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

UNITED STATES OF AMERICA,

Plaintiff and Counter-Defendant,

Civil Action No. 77-71100
Honorable John Feikens

vs.

STATE OF MICHIGAN,

Defendant and Cross-Plaintiff
And Cross-Defendant,

vs.

CITY OF DETROIT, a municipal corporation, and
DETROIT WATER AND SEWERAGE DEPARTMENT

Defendant and Cross-Plaintiff,

vs.

ALL COMMUNITIES AND AGENCIES UNDER
CONTRACT WITH THE CITY OF DETROIT FOR
SEWAGE TREATMENT SERVICES, et al.

AFFIDAVIT OF KEITH M. SWAFFAR, P.E.

STATE OF MICHIGAN)
)SS
COUNTY OF WAYNE)

I, Keith M. Swaffar, P.E, after first being duly sworn, make this affidavit:

1. I am competent to make this Affidavit and can attest to the facts contained herein from my personal knowledge.
2. I served as the chief engineer during the stabilization, investigation, design and reconstruction of the Romeo Arm Interceptor sewer over the period from August 2004 until the project was completed in June 2005.
3. I have been a practicing civil engineer for the last 26 years and have been employed by NTH Consultants, Ltd. since 1979. I started with the firm as a staff

engineer and was named president in 2003. Over this period, I have served in all major engineering positions in the firm. I have a BS and MS in Civil Engineering from Michigan State University and have been a licensed professional engineer in the State of Michigan since 1982.

4. During my professional career, I served in a field-engineering role during the failure and subsequent stabilization of the Corridor Interceptor in 1981. I was also a design engineer for the turning structures associated with the permanent repair work for the previous repair work to the Romeo Arm Interceptor Sewer in 1983.

5. NTH Consultants, Ltd. has provided geotechnical and underground engineering services to DWSD as their engineering consultant since 1985. Over this period of time, I have been involved in a number of investigations and inspections related to existing DWSD underground facilities. These include the NE Raw Water Tunnel Failure, the Southfield Sewer Stabilization and By-pass construction as well as the inspection of the Springwells Raw Water Tunnel, SW Intake Tunnel, Belle Isle Intake Tunnel and the Port Huron Intake Tunnel. I have also been involved in tunnel condition investigations and tunnel distress evaluations for Wayne County, Michigan, Oakland County, Michigan as well as the City of Minneapolis, Minnesota. Many of these projects involved the design of access structures for inspection or the design of access structures and stabilization methods as a result of distress encountered in the tunnel.

6. On August 22, 2004, I received a call from DWSD staff to go into NTH records to find engineering drawings related to the previous repair efforts of the Romeo Arm Interceptor in the vicinity of 15 Mile and Hayes Roads in Sterling Heights, Michigan. I proceeded to go to the office to locate the drawings on Sunday afternoon so that I could have copies available for DWSD staff to review on Monday morning. I subsequently met with DWSD staff, provided the drawings and discussed my thoughts relative to stabilization and repair of the facility. Later that afternoon I was asked to visit the site and meet with Messrs. Mercado and Fujita of DWSD on the site. At that time, I reviewed the conditions apparent at the ground surface and provided my input to senior DWSD staff relative to what I believed to be the critical elements of work required to stabilize and repair the Romeo Arm Interceptor. Subsequently, NTH was retained under Inland Waters' Contract to manage the engineering investigation of the failure as well as the development of the stabilization and repair program and detailed design of the program components. During the field activities, my staff monitored and documented the work as well as the conditions encountered during repair of the sewer. Throughout the period of time the repair activities were under design and construction, I served as the project manager for the engineering efforts associated with the project.

7. During the course of the project, engineers with NTH Consultants as well as several subconsultants developed engineering designs and recommendations relative to various components of the project including:

- Stabilization of the sinkholes using grouting and sheet pile stabilization
- Monitoring the condition of the adjacent structures

- Installation of access and pumping shafts on the Romeo Arm
- Design of temporary and semi-permanent bypass pumping systems
- Design of isolation bulkheads
- Design of groundwater dewatering systems
- Exploration of subsurface conditions
- Design of a repair access shaft structure
- Design of Pipe replacement systems
- Documentation on in-situ sewer conditions during repair
- Replacement of utilities and roadways
- Grouting stabilization of settled pipe segments and subgrade materials

8. During the course of the repair activities at the site, staff from my firm documented the condition of the Romeo Arm Interceptor sewer as it was initially inspected using remote closed circuit television methods. During the repair and replacement activities, the condition of the pipe was also documented, as it was exposed, to aid in the evaluation of the failure. Based on these observations, the consideration of subsurface data from current and previous borings performed at the site as well as documented design and construction observations from the original construction and the 1978 failure and subsequent repair, we have evaluated the failure of the Romeo Arm Interceptor and prepared the attached memorandum, dated June 30, 2005, which summarizes our observations related to the ground and pipe conditions noted during the repair activities as well as our evaluation of the mechanism that resulted in the failure of the sewer. A copy of the memo is attached to this affidavit.

9. Based on the data developed during the repair activities, the following points are made in the referenced memorandum:

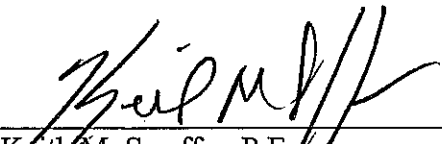
- A. Within the limits of the east sinkhole, the ground conditions surrounding the tunnel generally consist of very dense glacial till. This material, which is locally termed "hardpan," varies from very hard gray clayey silt to silty clay, but regardless of its exact constituent composition, generally behaves as a cohesive material. Within the limits of the east sinkhole, the hardpan is underlain by very compact silt to sandy silt. The thickness of this deposit ranges from 36-inches to 60-inches at the boring locations. The interface between the hardpan and silt materials is generally at or immediately below the invert of the sewer at this location.
- B. Flow levels of sewage within the Romeo Arm are influenced by the constriction placed in the Corridor Interceptor following the failure of that sewer in 1981. The constriction results in a backwater effect in the Romeo Interceptor as well as typical flow levels of 4-feet to 5-feet. Further review of DWSD inspection reports for the Romeo Arm indicate the presence of up to 12-inches of sludge at the invert as well as the presence of poisonous hydrogen sulfide gas. Due to these flow levels and the presence of sludge and gas, manned entry and inspection of the Romeo Interceptor is not routinely feasible. Under these conditions, remote inspection of the pipe using a closed circuit television camera and a floating sled are the most appropriate technology.

- C. Groundwater in the vicinity of the sinkhole was well above the tunnel at approximately elevation 580.
- D. The sewer invert in the vicinity of the east sinkhole is at approximately elevation 547.5. As such, there is a differential water head between the inside and the outside of the sewer on the order of 28-feet if a flow level in the pipe of 4-feet is considered.
- E. Unreinforced concrete tunnel linings such as that used for construction of the Romeo Arm typically develop longitudinal cracks at the crown and invert as a result of the redistribution of soil pressures such that the liner will function as a compression ring.
- F. The presence of circumferential cracks in unreinforced tunnel liners is not uncommon as a result of shrinkage when pour lengths exceed distances on the order of 35-feet. The presence of these cracks does not impact the liner's ability to resist the surrounding soil loads.
- G. The presence of the silt materials at and below the pipe invert together with the differential groundwater pressures and the cracking inherent in the unreinforced liner lead to a migration of the silt material into the pipe over time. This process, which is called "piping," eventually led to the development of a void underneath the pipe.
- H. Because the pipe in the vicinity of the east sinkhole was surrounded by hardpan material, the hardpan and sewer were able to bridge the void developed, as a result of the soil piping, until some point in time when the size of the void exceeded the hardpan's ability to span it.
- I. Based on our observations during the repair activities, the pipe sections within the east sinkhole area settled over 10-feet. Visual inspection of these sections indicated that they were essentially intact and did not exhibit the substantial diagonal cracking which has been previously observed in similar tunnels that have been subjected to settlement as a result of piping over extended periods of time, such as the conditions noted during the 1980 Corridor Interceptor failure or in 1985 in the NE Raw Water Tunnel.
- J. Based on the ground conditions and our observations of the failed pipe sections, our opinion is that the failure of the Romeo Arm beneath the east sinkhole was a catastrophic event that occurred suddenly. In this sort of failure, it is doubtful that there would have been clear indications in the tunnel that such a failure was imminent and such imminent failure would likely not have been obvious, even with regular inspections of the area.
- K. The west sinkhole developed subsequent to the failure of the tunnel beneath the east sinkhole. The failure to the west was a result of a domino-effect failure of adjacent sections as a result of the failure to the east and the resultant migration of the surrounding granular soils into the sewer.

10. The Romeo Arm Interceptor was inspected regularly into the mid 1990's and subsequent reinspections would have been recommended at 5-year intervals. In 2000, a limited inspection was performed that focused on a previously identified leak outside of the current failure area. Due to the catastrophic nature of the failure, inspection of the failure area in 2000 would certainly have not indicated any distress in the pipe and the

depth of flow would have made detection of silt piping into the pipe's invert undetectable. Further, based on the anticipated stable findings, re-inspection of the pipe would not have been called for a period of approximately a year after the current failure occurred.

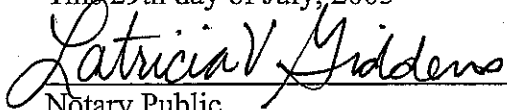
Further, affiant sayeth not.



Keith M. Swaffar, P.E.

Subscribed and sworn to before me

This 29th day of July, 2005



Notary Public
Wayne County, Michigan

My Commission expires 5-9-06

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LATROIA V. GIDDENS
NOTARY PUBLIC WAYNE CO., MI
MY COMMISSION EXPIRES May 9, 2006

EXHIBIT 3-A



MEMORANDUM

TO: Mark Jacobs, Dykema Gossett, PLLC **DATE:** June 30, 2005

FROM: Harry Price / Keith Swaffar **PROJECT NO:** 15-040906-00

SUBJECT: Preliminary Sinkhole Evaluation
 Romeo Arm Oakland – Macomb Interceptor
 15 Mile Road between Moravian and Hayes
 Sterling Heights, Michigan

Introduction

The purpose of this memorandum is to discuss the development of the sinkhole that appeared over the Romeo Arm of the Macomb Interceptor on August 22, 2004 and to provide our preliminary assessment of the failure. The following sections and paragraphs discuss the history of the sewer, its construction and surrounding ground conditions, as well as our observations made during repair activities. Based on our analyses of the available and developed data and our field observations, we present herewith our preliminary evaluation of the failure mechanism for the Interceptor pipe.

From the initial discovery of the developing sinkhole in the early morning hours of August 22nd, the sinkhole expanded to an overall length (east and west) of approximately 245 feet, with a maximum width (north and south) of 130 feet at its deepest section. The sinkhole was characterized by distinct depressions at the east and west ends, with the eastern depression being the wider and deeper of the two. The cone of the eastern depression extended to approximately 30 feet below the existing ground surface, while the western cone extended to a depth of approximately 20 feet. Based on the surveyed dimensions at the depressions, the volume of material lost has been computed to be approximately 7,000 cubic yards of soil.

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The sinkhole is located approximately 900 feet west of a 1978 sewer failure reportedly caused by a third party action, and is located to the west of the terminal shaft constructed as part of the repair activities associated with the 1978 failure. Based on dimensions obtained in the field, the bottom of the cone associated with the easterly depression is located approximately 10 feet west of the outside edge of the aforementioned terminal shaft.

The stabilization of the sinkhole was accomplished using a number of methods, including dewatering, compaction grouting, jet grouting, and the installation of steel sheet piling between the sinkhole and the adjacent houses on the southern side of the sinkhole. To maintain service to customers during the stabilization and subsequent repair activities, wastewater flows were maintained through construction of a by-pass system which included construction of two pumping shafts, bulkheads, installation of pumps, valves, an at-grade pipeline as well as excavation and construction of a discharge shaft.

The repair of the damaged sewer in the sinkhole area was accomplished by the construction of a rectangular shaped recovery shaft, the removal of the enclosed soils and portions of the damaged tunnel followed by the installation of a reinforced concrete pipe supported on a concrete cradle. Within areas where the existing sewer had settled well below the shaft bottom, the failed sections below the bottom of the recovery shaft were grouted in place prior to placement of the cradle. During excavation and removal of the failed sewer sections, observations relative to elevations and distress of the sewer as well as ground conditions above and below the pipe were recorded. The shaft and its associated precast were backfilled with flowable fill to 18-inches above the pipe sections and with granular material thereafter to the original ground surface.

History

The Romeo Arm of the Macomb Interceptor was constructed during the period from June 1971 to December 1972 under DWSD Contract No. PCI-12A. The alignment of the Romeo Arm extends over

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a distance of approximately 22,400 feet. The sewer extends in a north-south direction beneath Garfield Road from immediately north of the Clinton River southward to 15 Mile Road. The alignment then turns to the west and extends beneath 15 Mile Road to the terminus of the Romeo Arm at the Corridor Interceptor.

The sinkhole depressions are located between approximately original project Station Nos. 70+00 and 67+70. Based on the test borings performed for Contract PCI-12A as well as the data associated with the 1978 failure under DWSD Contract No. PC433, the tunnel was constructed through a mix of granular and cohesive soils. In general, the data suggests that, within the eastern portion of the failure, the bore was generally through very hard silty clay with granular soils existing from immediately below the invert to as high as the lower quarter point. To the west, the hardpan disappeared and the base was essentially through granular soils. Based on Standard Penetration Test results for this material, the granular soils are very compact in relative density. The logs of test boring indicate that the groundwater table was located roughly 10 to 15 feet below the ground surface prior to the construction of the sewer. This elevation corresponds to a water head at the tunnel invert of approximately 40-feet. Groundwater control, during construction, was reportedly provided through a combination of dewatering and compressed air.

The available information indicates that the primary earth support system for this tunnel, prior to placing the concrete lining, was generally structural steel ribs and timber lagging. This support system was assembled in the tail shield of the mining machine and then expanded with hydraulic jacks once the rib cleared the tail shield of the mining machine. Each rib was assembled from three, 120-degree segments of structural steel bolted together end to end. It has been reported that the joints between the individual segments, within the PCI-12A Contract, were generally located at the tunnel invert and at the upper quarter points. The As-Built drawings indicate that these ribs were generally W4x13 steel sections installed at 4-feet on center. Timber boards were placed between the ribs to support the surrounding soil and transfer the earth loads back to the steel ribs. Details of lagging boards composition and dimensions are not available.

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It is our understanding that Contract PCI-12A was constructed in two directions from a central mining shaft located to the west of Garfield Road along the south side of 15 Mile Road, at the site of the present Garfield Gate. We also understand that, because of the use of the compressed air, concrete placement was accomplished through the use of a concrete pump and slick line system. Under this method of concrete placement, the discharge line from the pump (slick line) is inserted in the crown of the tunnel. As the concrete is placed in the crown, it flows by gravity around the tunnel and the slick line is withdrawn. The last portion of the concrete to be placed is at the bulkhead closest to the concrete pump. Using this concrete placement method, the leading edge of concrete generally slopes from the crown to the invert. American Concrete Institute literature indicates that this slope is approximately 3 horizontal to 1 vertical and does not build up until it encounters a bulkhead or an obstruction. Based on the As-Built Drawings, it appears that concrete was placed in reaches ranging from 30 feet to 140 feet in length.

Review of the PCI-12A As-Built Drawings indicates that, due to grade variations during mining, in some cases the available space for the concrete liner was thinner than specified. In these cases it appears that, if the variance was less than 3-inches, DWSD permitted the contractor to place reinforcing steel in the liner to help carry loads imposed by the surrounding ground. Within the sinkhole area and the immediately adjacent areas to the east and west, reinforcing steel was placed in the invert between Station Nos. 69+29 and 69+30, 70+49 and 70+69, 72+09 and 72+44, 72+44 and 72+78, and in the crown between Stations Nos. 71+74 and 72+09. The amount of reinforcing steel was a function of the decrease in liner thickness. If the decrease was greater than 3-inches, DWSD specifications required the contractor to re-mine the tunnel to achieve the required liner thickness. Based on our review of the As-Built records, it does not appear that re-mining occurred at any locations during construction of PC-12A.

Flows within the Romeo Arm are conveyed to its confluence with the Corridor Interceptor at 15 Mile and the Edison Corridor (approximately 1.3 miles to the west). At this location, flows from the 9.5 feet

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diameter Oakland Arm Sewer also enter the Corridor Sewer from the north. Following the 1978 failure within the Romeo Arm, subsequent DWSD inspection of the Corridor Interceptor in January 1980 identified three areas of distress within the sewer. The three distressed areas were located within a reach of sewer approximately 2300 lineal feet in length. The area identified as Distressed Area No. 1 was located approximately 400 feet south of 15 Mile Road and south of the confluence of the Oakland and Romeo Arms with the Corridor Interceptor. Details of this failure were documented in a report entitled, "15 Mile Road/Edison Corridor Sewer Tunnel Failure Study, Detroit Area, Michigan" prepared by the U.S. Army Corps of Engineers, dated January 1981.

Repair of the 1981 Corridor Interceptor failure was performed within an open cut excavation constructed over Distressed Area No. 1. From this excavation, 9-foot diameter precast concrete pipe was placed within the limits of the three distressed areas resulting in a 9-foot diameter constriction in the Corridor Interceptor over a distance of approximately 2,340 feet. As a result of this constriction as well as the volume of flow within the Oakland Arm, a backwater effect is developed in the Romeo Arm Interceptor. The backwater effect has been calculated to result in flow depths on the order of 4 to 5 feet in the vicinity of the recent repair activities to the Romeo Arm. The flow depths have, in general, been verified during the recent cleaning activities within the Romeo Arm.

As a result of the 1978 failure, flows from the Romeo Arm were diverted over the period from 1978 to 1983. The flow diversion over this period of time was accomplished through the reactivation of a treatment plant at the Selfridge Air National Guard Base and a pump station in Sterling Heights. In addition, flows could be held at the temporary pump station constructed as a part of the semi-permanent by-pass of the 1978 collapse.

Concurrent with the repairs at the corridor and the installation of the permanent by-pass at 15 Mile Road and Hayes, a detailed condition survey of the Oakland Macomb Interceptor System was undertaken for DWSD by Jenny Engineering in 1980. The results of this condition survey were presented in a report entitled "Inspection of Sewer Tunnels", dated December 1981. It should be noted

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that, because of the ongoing repair and remedial activities within the Romeo Arm and the Corridor Interceptor at that time, flow levels were substantially lower than current levels, thereby enabling inspection teams to walk the sewers. This permitted detailed observations and measurements to be taken relative to existing distress, sludge levels and ground water inflows.

Subsurface Conditions

In order to evaluate the subsurface conditions within the sinkhole area, we compiled the available geotechnical data in the vicinity of the failure. Available data included test borings performed as part of the original project design in the late 1960s, test borings and well installation logs associated with the previous failure and repair effort, as well as those borings performed during the current failure and repairs. The Pre-Failure Composite Plan and Profile (appended to this memorandum as Figure No. 1) was developed based on the reliable subsurface data, which consisted of discrete soil samples which included Standard Penetration Test (SPT) data for disturbed samples as well as laboratory test data for both disturbed and undisturbed samples. Also shown on Figure No. 1 is the "as-constructed" sewer alignment and profile as well as the locations of the various borings and other data points used in our evaluation. In addition, the profile contains relevant as-built data such as the locations of construction joints and waterstops as well as reinforcing steel obtained from the PCI-12A As-Built drawings.

We have also prepared a Post Failure Composite Plan and Profile, which is attached hereto as Figure No. 2. Presented on the Figure are the subsurface conditions developed from observations of excavations during construction and from discrete soil samples from soil boring performed during the repair activities. Data used in the development of this profile included SPT data for disturbed samples as well as grain size determinations, natural moisture content and in-place dry densities.

Review of the Pre-Failure ground conditions presented on Figure No. 1 indicates that the sewer conditions in the vicinity of the east sinkhole vary from those at the location of the west sinkhole. Within the east portion of the failure zone, the tunnel is overlain by sands containing varying amounts

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of silt and gravel that extend from the ground surface to approximately the crown of the sewer. As shown on the profile, within the limits of the east sinkhole, the tunnel is generally surrounded by very hard silty clay to clayey silt. This is a very dense soil that generally behaves as a cohesive material and is locally termed "hardpan". As shown on the profile, the hardpan material extends to the west to somewhere in the vicinity of Station No. 68+70.

Based on the test boring and laboratory data, the hardpan material is underlain, near or immediately below the tunnel invert, by very compact silt to sandy silt. The thickness of this material is somewhat limited, varying from 36-inches to as much as 60-inches. Due to the limited vertical extent of this material and the sampling interval used in the borings, it is very likely that the silt layer, although present, was not discovered through the soil boring sampling process. We believe such a situation likely existed east of the east sinkhole. Near this location, silt was noted to the east and to the west, but was not recovered in borings R-22 and C-89 and observation well OW-2. Within this reach, we have estimated the probable vertical extent of the silt, indicated as dashed lines on Figure No. 1.

As shown on the profile, the silt is generally located in the crown between approximately Station Nos. 66+80 and 67+60. Continuing to the east, the silt elevation declines to generally the springline of the tunnel. As also shown, the hardpan material terminates near Station No. 68+70.

West of the location where the hardpan appears to terminate, the silt is overlain by the granular materials that also overlie the hardpan. These sandy soils also underlie the silt within the tunnel reach presented on the profile. In general, the sands extend to elevations immediately above or below elevation 520, where they are in turn underlain by hardpan materials.

Following the previous two tunnel failures in the area in 1978 and 1981, the U.S. Army Corps of Engineers (COE) developed several methodologies to evaluate the piping potential of soils based on their grain size distribution. Specifically, the COE method utilizes the grain size distribution at which 50 percent and 85 percent, D50 and D85, of the soil particles are finer. Since the failure in 1981 of the Corridor Interceptor, the pre-failure presence of silt and sandy silt at and immediately below the tunnel

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invert was viewed as a key factor in the failure. As such, more than 50 hydrometer tests were performed on fine grained silts and clays recovered from the borings to define the material characteristics and vertical extent of the silts and distinguish them from the overlying and underlying sands. This data was also used to evaluate the piping potential of the soils.

Based on the laboratory data, the silt deposits shown on the profile are non-plastic materials. The percent passing the No. 200 sieve ranges from 66% to 76%. Evaluation of the D50 and D85 indicates that these parameters range from 0.03 mm to 0.34 mm and from 0.04 mm to 9.5 mm, respectively.

Grain size analysis for the upper and lower sands indicates these soils are generally well graded with the percentage of fines and gravels ranging from 6% to 30% and from 2 to 20, respectively. Based on these parameters, these soils can be classified as SW, SP, SM, SG and SP-SM based on the Unified Classification System.

Field Observations

Observations and field measurements made during the repair activities are summarized on the Deflected Sewer Profile, which is attached as Figure No. 3. The figure also contains photographs at various locations depicting the condition of the pipe as the excavation progressed. Review of the Deflected Sewer Profile presented on Figure No. 3 indicates that, following the event, the sewer between approximately Station Nos. 68+80 and 69+23 dropped vertically 10.2 feet to 10.6 feet, with the greatest settlement noted at approximately Station No. 69+13. Within this zone, observations made during excavation within the recovery shaft indicated that the pipe was essentially intact and, with the exception of the upper reaches, filled with soils that are consistent with those encountered above the pipe. In general, the upper 2 feet to 5-feet of the barrel was filled with flowable fill material placed to stabilize the pipe prior to recovery shaft construction.

Based on the field observations noted on Figure No. 3 as well as subsurface data obtained following the failure, the tunnel barrel location and resulting ground conditions encountered are also presented on the

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Post Failure Profile, Figure No. 2. As indicated on Figure No. 3, east of the deepest zone, the pipe section was essentially crushed as a result of the failure. Within this zone, the sides of the pipe had collapsed and the tunnel roof and invert were crushed. West of the deep failure area, the sides had collapsed and the roof was crushed, but portions of the invert were found intact. Although the roof concrete had been crushed, the structural steel ribs, however, were intact. The top of pipe elevation shown on Figure Nos. 2 and 3 is based on the presence and vertical location of these rib sections. As a result of the failure, the structures east of the failed section also experienced settlements of approximately 12-inches.

On the west end of the failure, the pipe sheared at approximately Station No. 67+75. At this location, the invert on the east side of the failure plane appears to have dropped 0.8 feet to 1.6 feet. This section of failed pipe extends to the east to approximately Station No. 67+98. Review of the sinkhole depressions indicates that these were located away from the section of deepest failure. On the east side of the failure, the depression is generally centered above the crushed section where the tunnel pulled away from the permanent by-pass terminus shaft. The development of an opening at the crown appears to have allowed granular material from above to fill the sewer. Laboratory testing of samples of soils taken from inside the sewer at this location indicate that the grain size distributions are consistent with the overlaying pre-failure soils.

As may be seen, the greatest deflection was recorded at Station 69+13, where the pipe settled in excess of 10.5 feet based on the as-built drawings and the field measurements obtained during the repair. This location is 16 feet from the construction joint at Station 69+29. Between Stations 69+29 and 69+39, the As-Built drawings indicate that reinforcing steel was also used, presumably due to the inadequate liner thickness prior to placement.

Based on our field observations, the position of the joints between the individual structural steel sections used to create ribs were generally consistent with the record data. In general, the steel ribs consisted of three 120 degree arcs, with the joints typically located at the invert as well as the upper

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quarter points. Periodically, one of the ribs was oriented such that the joint between the individual sections was rotated approximately 30 degrees from the adjacent sections. This is a typical practice in tunnel construction.

While cracked and broken concrete was observed during the excavation of the tunnel, there was no evidence of characteristic diagonal cracking typically found in previous subsidence failures. As seen on the Deflected Sewer Profile and Photographic Location Plan, the tunnel barrel from Station Nos. 69+22 to 68+80 dropped as a unit vertically up to 10 feet. The limited observations of this section that were possible during the repair indicated that this reach of pipe was essentially intact and was not crushed, as would be expected as a result of subsidence occurring over an extended period of time. At each end of this central section, the failed pipe transitions from the subsided section to the undamaged adjacent reaches.

The ground conditions noted following the failure exhibited two significant differences from the pre-failure conditions. Although the post-failure ground conditions indicate that hardpan extends to the west to approximately the same general location, the hardpan material is significantly lower than pre-failure, compatible with the settlement of the sewer barrel. Also, the silt and sandy silt layer, which existed at or immediately below the invert, was now missing. Conditions observed in the borings and recovery shaft excavation indicated that this material no longer existed and instead had been replaced by the granular blends encountered above and below.

Evaluations

It is our opinion that the damage to the Romeo Arm of the Macomb County Interceptor and the resultant sinkhole appear to be consistent with a loss of ground into the tunnel. The principal soil type lost appears to be a stratum of silt that was immediately underlying the tunnel in the vicinity of the eastern end of the sinkhole before the failure but was noticeably absent during the repair activities. The mechanism of ground loss appears to be a process called piping. In this process, soils are forced

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through cracks by the pressure of the groundwater. This failure mechanism is described in great detail by the Corps of Engineers in their study of the Edison Corridor failure in the early 1980's. Based on the field observations, the failure appears to be centered at approximately Station 69+16, where the greatest deflection was observed.

In their 1981 report, the Corps indicated that the minimum size opening through which a soil could pipe was an opening equal in width to the D_{50} of the soil. This replaced an earlier criterion, which utilized a formula that considered both the soils D_{50} and D_{85} . Granular soils tend to erode more than cohesive soils in flowing water because there is no cohesion between the soil particles that must be overcome for the particle to move. Silt is a granular soil; accordingly, it is more erodable than hard clay. Silt is also a fine-grained material. Grain size data from the hydrometer tests indicate that the minimum slot widths for this material ranged from 0.001 inch to 0.002 inch in the silt stratum. As may be seen on the pre-failure composite profile, the silt material was present at or near the tunnel invert between approximately Station Nos. 68+00 and extending east past the failure areas. Between Station 69+80 and 72+20, the original PCI-12A tunnel was bypassed as a part of the repairs from the 1978 damage.

At Station 69+13, where the greatest drop was recorded, this silt stratum extended approximately 3 feet below the tunnel liner in the invert. Once the integrity of the tunnel was breached, the underlying sands were washed into the tunnel through a combination of sewage flows and groundwater inflows.

As noted previously, a condition survey of the entire Oakland Macomb Interceptor System was prepared by Jenny Engineering after the distress at the Edison Corridor was encountered. The Jenny Condition Survey Report indicates that sloping, circumferential and longitudinal cracking were observed in the PCI-12A tunnel. The Jenny Report indicates that these cracks were not active at the time of the condition survey. The sloping cracks generally appeared to be cold joints in the concrete liner resulting from the method of concrete placement for lining construction. The presence of these cold joints is consistent with published literature on tunnel concreting. With respect to circumferential

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cracking, these are typically associated with construction joints and, when the length of the concrete pour exceed 35 feet, tend to occur at approximately 30 feet on center as a result of the shrinkage of the concrete.

Longitudinal cracking occurs when the tunnel liner flexes. This flexing is generally associated with the redistribution of soil pressure that occurs after a tunnel is constructed. For tunnels constructed in cohesive soils, this redistribution may take several years. In predominately granular soils, this redistribution generally occurs faster. The Jenny Report suggests that the observed longitudinal cracks were associated with the placement of the joints in the rib sections. As discussed, the joints in the rib sections were generally at both upper quarter points and the remaining point is at the invert. Accordingly, if the cracks appear at the upper quarter point, it is likely that there is a corresponding crack on the invert of the tunnel that could not be observed because it was below the top of the flow in the tunnel at all times.

Station 69+13, where the greatest deflection was recorded, is located approximately 16 feet from a control joint. Because of its proximity to a bulkhead, cracking could be associated with either a cold joint or a result of concrete placement or longitudinal cracks. The proximity to the bulkhead likely excludes circumferential cracking. Because Station 69+13 is beyond the terminal shaft of the previous repairs, it suggests that it is not a consequence of the previous repair work.

It is significant that families of diagonal cracking were not observed on the ends of the distressed sections. The lack of these diagonal cracks suggests that the failure was a sudden catastrophic event rather than the result of slow and continuous subsidence/deflection of the tunnel. The Corps of Engineers Report on the Corridor Failure and the Failure Report for the Northeast Raw Water Tunnel prepared by NTH Consultants both documented the families of diagonal cracking resulting from subsidence throughout their respective failure sections. These families of diagonal cracks, when encountered, were generally oriented at roughly 45-degree angles to the invert and dipped downwards towards the point of greatest deflection.

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In conclusion, based on our evaluation of information and data presented herein, it is our opinion that the failure of the tunnel was due to loss of ground support. We believe the failure occurred as a result of the following developments: Cracks, which developed in the concrete tunnel over time, coupled with a high groundwater pressure head, allowed silt and sandy silt to infiltrate into the tunnel in the vicinity of the east sinkhole. Over time, this resulted in the development of voids to develop under the tunnel structure. However, because the upper portion of the tunnel was constructed within a layer of high shear strength, somewhat cohesive hardpan, the tunnel and hardpan acted as a structural unit and were able to remain essentially in place and intact until a very large void had developed underneath the tunnel. Eventually, the void became so large that the tunnel/hardpan matrix was no longer capable of bridging this void, resulting in a sudden drop of the tunnel/hardpan unit. Once this occurred, the hydrostatic pressure of the groundwater carried the easily erodable granular materials into the flowing tunnel, causing the sinkholes (depressions) to form at the surface. This failure mechanism is consistent with the generally intact nature of the tunnel and with the drop in elevation of the hard to very hard clay stratum observed in the photographs taken in the recovery shaft and presented on Figure 3.

With regard to the western depression on 15 Mile, as indicated on Figures 2 and 3, the center of the depression is located roughly at the western end of the dropped section. Based on observations of the condition of the pipe during the excavation for the repairs, as well as the prevailing subsurface conditions, it is our opinion that the western depression developed subsequent to the eastern depression. We believe that the sudden failure/drop of the tunnel near the east depression initiated a 'domino-effect' failure of the tunnel west of that location. The break in the tunnel resulting from the drop created significant openings, which allowed the surrounding granular soils to essentially 'flow' into the tunnel due to the high groundwater hydrostatic pressure. This resulted in loss of support for the sewer, which caused displacement of the sewer and the opening of additional cracks, which allowed more soils to flow into the sewer. This phenomena continued until emergency repairs were initiated, including stabilization of the surrounding soils by grouting and construction of the temporary by-pass system.

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It is also our opinion that, until the failure occurred, there would have been minimal or no visible evidence of the underlying void. Further, since the backwater from the Corridor restriction resulted in a minimum of 5 feet of water or more in the vicinity of the sinkhole, the presence of sand accumulating in the invert would likely have gone unnoticed.

At the present time, we are in the process of assembling the materials for a formal report documenting the failure and subsequent repair of the Romeo Arm Sewer.

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EXHIBIT 4

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

THE UNITED STATES OF AMERICA,

Plaintiff and
Counter-Defendant

Civil Action No.
771100

-vs-

STATE OF MICHIGAN,

Defendant and
Counter-Plaintiff
and Cross-Plaintiff,

-vs-

THE CITY OF DETROIT, a municipal
corporation, THE DETROIT WATER &
SEWERAGE DEPARTMENT,

Defendant and
Cross-Defendants

-vs-

All Communities and Agencies Under
Contract With the City of Detroit
For Sewage Treatment Services.

REPORT AND RECOMMENDATIONS
OF THE MASTERS

DATE: MAY 1, 1978

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(1) General Methodology

84. The "cash" basis of determining the revenue requirements of the Detroit sewage disposal system has been described in Part B. After total revenue requirements are determined by this method, deductions are taken for amounts to be raised by federal and state grants and by bond sales. The remainder of the revenue requirements must be raised by user charges. Development of a system of user charges to generate these revenue requirements could follow either a "cash" basis or a "utility" basis. Detroit has used a "utility" basis of developing user charges in the 1974 and 1977 rate studies, and apparently has always used this method. The expert witness for the objectors testified that this method of developing rates is "perfectly applicable to the Detroit situation." (Gillett, Tr. 189.)

85. The first step in developing user charges under either a cash basis or a utility basis is to determine whether distinguishable customer classifications should be developed to reflect the fact that distinguishable costs are incurred in serving different classes of customers. Detroit has developed several different classes of customers. No challenge has been addressed to the propriety of the classes it has developed. Thus, as a matter of illustration, all parties agree that it is proper for Detroit to set rates on the assumption that Detroit customers should pay the costs of the local sewer system that provides individual service to individual customers in Detroit, and that suburban customers should not pay any part of those costs. So too, it is agreed

that individual Detroit customers should not bear any portion of the costs of the Oakland-Macomb interceptor, a large interceptor sewer constructed by Detroit to gather sewage flow from points in Oakland and Macomb County.

86. After specific customer classes have been identified, and the costs that are peculiar to each class have been isolated, there remain many costs for facilities that are used to serve all of the various customer classes in common. Thus major interceptor sewers in Detroit, and the sewage treatment plant itself, provide service in common to all of the separate customer classes. Some method of allocating these common plant costs among the different customer classes must be found. Although it would be possible to take account of such matters as the relative strength of sewage flows or delivery flow rate characteristics in allocating common plant costs, Detroit has chosen to allocate these costs solely on the basis of relative volumes of flow. In the 1977 rate study, it was projected that of total sewage flow volume, Detroit would account for 53.7% in 1977-1978, 53.3% in 1978-1979, and 52.9% in 1979-1980. The suburbs, correspondingly, were projected to account for 46.3% in 1977-1978, 46.7% in 1978-1979, and 47.1% in 1979-1980. (Exhibit 9, Table 1, P. 12.) As noted in Part III-D, none of the objections that remain in this proceeding challenge the projections of relative flow, and none of the objectors have asserted that common costs should be allocated on any basis other than relative flow.

87. If rates were set on a cash basis, no further complications would remain. Common plant costs would be allocated

EXHIBIT 5

ORDINANCE NO. 27-86
PROVIDE FOR ISSUANCE AND SALE OF NOT TO EXCEED
\$120,000,000 OF SEWERAGE DISPOSAL SYSTEM REVENUE
REFUNDING BONDS OF THE CITY.

AN ORDINANCE to provide for the issuance and sale of Sewage Disposal System Revenue Refunding Bonds of the City of Detroit under the provisions of Act 94, Public Acts of Michigan, 1933, as amended for the purpose of refunding a portion of the City's outstanding Sewage Disposal System Revenue Bonds; to prescribe the form of bonds; to provide for the collection of revenues from the City of Detroit Sewage Disposal System sufficient for the purpose of paying the costs of operation and maintenance of said system and to pay the principal of and interest on said bonds and to provide for other requirements of this ordinance; to provide for the segregation and distribution of said revenues; to provide for the rights of the owners of said bonds and enforcement thereof; to provide for the issuance of additional bonds for additions, expansions, improvements and repairs to the Sewage Disposal System of the City and to refund outstanding bonds; to provide for other matters relating to said bonds and said system and to provide for the repeal of Ordinance No. 517-E, as amended by Ordinance No. 526-E, Ordinance No. 544-E, Ordinance No. 360-F, Ordinance No. 603-F, Ordinance No. 402-G, Ordinance No. 451-G, Ordinance No. 493-G, Ordinance No. 527-G, Ordinance No. 312-H, Ordinance No. 321-H, Ordinance No. 407-H, Ordinance No. 414-H, Ordinance No. 415-H, Ordinance No. 420-H, Ordinance No. 502-H, Ordinance No. 585-H, and Ordinance No. 26-86 of the City of Detroit.

WHEREAS, the City of Detroit (the "City"), Michigan, by Ordinance No. 517-E, as amended by Ordinance No. 526-E, Ordinance No. 544-E, Ordinance No. 360-F, Ordinance No. 603-F, Ordinance No. 402-G, Ordinance No. 451-G, Ordinance No. 493-G, Ordinance No. 527-G, Ordinance No. 312-H, Ordinance No. 321-H, Ordinance No. 407-H, Ordinance No. 414-H, Ordinance No. 415-H, Ordinance No. 420-H, Ordinance No. 502-H, Ordinance No. 585-H and Ordinance No. 26-86 (together "Ordinance No. 517-E"), entitled:

"AN ORDINANCE to provide for extending, enlarging and improving the sewage disposal system of the City of Detroit; to provide for the issuance and sale of revenue bonds under the provisions of Act 94, Public Acts of Michigan, 1933, as amended, to defray the cost thereof and to provide funds to refund outstanding sewage disposal system revenue refunding bonds; to provide for the retirement and security of the bonds to be issued hereunder; and to provide for other matters relative to said system and said bonds," has heretofore authorized, issued and sold Sewage Disposal System Revenue Bonds of the City in several series to finance extensions and improvements to the System (as hereinafter defined); and

WHEREAS, Sewage Disposal System Revenue Bonds Series A, Series 1969, Series 1970A, Series 1970B, Series 1979, Series 1980, Series 1982, and Series 1984 were issued pursuant to Ordinance No. 517-E in the original principal amount of \$216,000,000 of which \$194,520,000 remain outstanding and unpaid as of the date of the adoption of this Ordinance (the "517-E Bonds"); and

WHEREAS, Ordinance No. 517-E provides that bonds to refund the 517-E Bonds may be issued pursuant to an ordinance separate from Ordinance No. 517-E provided the issuance of such bonds satisfy the requirements of Ordinance No. 517-E; and

WHEREAS, to finance all or part of the cost of the refunding of the Refunded Bonds (as hereinafter defined) including costs of issuance and refunding, the Commissioners have recommended that the Series 1986 Bonds (as hereinafter defined) be issued in the aggregate principal amount of not to exceed One Hundred Twenty Million Dollars (\$120,000,000); and

WHEREAS, the refunding of the Refunded Bonds does not require the publication of a notice of intent under Act 94 (as hereinafter defined); and

WHEREAS, all things necessary to the authorization and issuance of the Series 1986 Bonds under the Constitution and laws of the State of Michigan and the City including Ordinance No. 517-E, have been done or will be completed or obtained prior to the issuance of the Series 1986 Bonds, and the City Council of the City is now empowered and desires to authorize the issuance of the Series 1986 Bonds;

THE CITY OF DETROIT ORDAINS:

Section 1. Definitions. Whenever used in this Ordinance, except when otherwise indicated by the context, the following terms shall have the following meanings:

- (a) "Act 94" means Act 94, Public Acts of Michigan, 1933, as amended.
- (b) "Act 354" means Act 354, Public Acts of Michigan, 1972, as amended.
- (c) "Additional Bonds" means any additional bonds of equal standing with the Series 1986 Bonds issued pursuant to Section 22 of this Ordinance.
- (d) "Bond" or "Bonds" means the Series 1986 Bonds, together with any Additional Bonds.
- (e) "Bond Reserve Account" means the account established within the Redemption Fund pursuant to Section 13 hereof.
- (f) "Bond Reserve Requirement" means the lesser of the Maximum Annual Debt

Service on any outstanding Bonds or the maximum amount permitted by the Code; for purposes of the Bond Reserve Requirement annual debt service on Variable Rate Bonds shall not, after the issuance of such Variable Rate Bonds, be adjusted because of an adjustment to the interest rate borne by such Variable Rate Bonds.

(g) "City" means the City of Detroit, County of Wayne, State of Michigan.
 (h) "Code" means the Internal Revenue Code of 1986, as it may be amended.
 (i) "Commissioners" means the Board of Water Commissioners of the City created by Article 7, Section 1501 of the Charter of the City or any successor body.
 (j) "Construction Fund" means the fund established pursuant to Section 18.
 (k) "Council" means the City Council of the City.
 (l) "Escrow Fund" means the Escrow Fund created pursuant to Section 17 hereof.
 (m) "Fiscal Year" means the fiscal year and operating year of the City which begins on July 1 and ends on the following June 30 as it may be modified.
 (n) "517-E Bonds" means the Sewage Disposal System Revenue Bonds Series A, Series 1969, Series 1970A, Series 1970B, Series 1979, Series 1980, Series 1982, and Series 1984 issued in the original principal amount of \$216,000,000 pursuant to Ordinance No. 517-E of which \$194,520,000 remains outstanding and unpaid as of the date of the adoption of this Ordinance.

(o) "Government Obligations" means any bonds or other obligations which as to principal and interest constitute direct obligations of the United States of America or obligations the principal and interest on which are fully guaranteed by the United States of America, including U.S. Treasury Trust Receipts.

(p) "Investment Obligations" means (if now or hereafter permitted by law) the following:

(i) Government Obligations;
 (ii) Bonds or other obligations of the following agencies of the United States of America: Banks for Cooperatives, Federal Intermediate Credit Banks, Federal Home Loan Banks System, Federal Land Banks, Export-Import Bank, Tennessee Valley Authority, Government National Mortgage Association, Farmers Home Administration, United States Postal Service, and the Federal National Mortgage Association to the extent that such obligations are guaranteed by the Government National Mortgage Association, any agency or instrumentality of the United States of America or any corporation controlled and supervised by, and acting as an agency or instrumentality of, the United States of America;

(iii) Certificates of deposit or bankers' acceptances of the Trustee or of any bank or savings and loan association with capital and surplus of at least \$100,000,000 and a bond or deposit rating of at least "A" from a Rating Agency or which bank or savings and loan association has its commercial paper rated in the highest category by a Rating Agency;

(iv) Repurchase agreements with a term not exceeding sixty (60) days with the Trustee or any bank with capital and surplus of at least \$100,000,000 and a bond or deposit rating of at least "A" from a Rating Agency which bank is a member of the Federal Reserve System or with government bond dealers recognized as primary dealers by the Federal Reserve Bank of New York, that are secured by Investment Obligations described in (i) or (ii) above, having a market value at the time of purchase (inclusive of accrued interest) at least equal to 102% of the full amount of the repurchase agreement and which Investment Obligations shall be held by a third party custodian which is a bank or trust company pursuant to a third party custodial agreement;

(v) Commercial paper rated in the highest category by a Rating Agency;

(vi) Any collective investment fund maintained or managed by a bank or trust company with capital and surplus of at least \$100,000,000 which invests solely in investments described in subsections (i) and (ii) hereof;

(vii) Direct and general obligations of any state of the United States of America, or any direct obligations of any political subdivision of a state, which, in each case, are rated in one of the highest two categories by a Rating Agency;

(viii) Municipal Obligations. (q) "Junior Lien Bonds" means bonds or other obligations which may be issued or incurred by the City to provide funds for any lawful purpose of the System which are of junior standing and priority of lien with respect to the Net Revenues to the claim of the 517-E Bonds or the Bonds.

(r) "Mandatory Redemption Date" means each of the several dates upon which Term Bonds in the principal amount of the applicable Mandatory Redemption Requirement are required to be redeemed under the ordinance or the resolution approving the sale of such Bonds.

(s) "Mandatory Redemption Requirements" means with respect to any Term Bonds, the principal amount of such Bonds required to be called for redemption prior to their stated maturity as provided in the ordinance authorizing the issuance or in the resolution providing for the sale of such Term Bonds. For all purposes of this Ordinance, Ordinance No. 517-E, the Bonds and the 517-E Bonds, Term Bonds shall be deemed to come due at the times and in the amounts of the Mandatory Redemption Requirements therefor and the principal amounts due on Term Bonds on the dates of their stated

maturities shall be reduced by the Mandatory Redemption Requirements theretofore becoming due prior to the stated maturities for such Term Bonds.

(t) "Maximum Annual Debt Service" means, at any point in time, with respect to Bonds and 517-E Bonds then outstanding, the maximum amount of principal and interest becoming due in the then current or any future Fiscal Year, calculated as provided in this definition. For purposes of calculating Maximum Annual Debt Service, the following assumptions are to be used to calculate the principal and interest becoming due in any Fiscal Year:

(i) in determining the principal amount due in each Fiscal Year, payment shall (unless a different subsection of this definition applies for purposes of determining maturities or amortization) be assumed to be made in accordance with any amortization schedule established for such debt, including any scheduled mandatory redemption of Bonds or 517-E Bonds, and for such purpose, the mandatory redemption payment shall be deemed a principal payment; provided, however, that principal of and interest on Bonds maturing on the first day of any Fiscal Year shall be deemed for purposes of this definition to mature on the last day of the immediately preceding Fiscal Year;

(ii) if any outstanding Bonds constitute Tender Indebtedness or if Bonds then proposed to be issued would constitute Tender Indebtedness, then for purposes of determining the amount of principal and interest due in any Fiscal Year on such Bonds, the options or obligations of the owners of such Bonds to tender the same for purchase or payment prior to their stated maturity or maturities shall be treated as a principal maturity occurring on the first date on which owners of such Bonds may or are required to tender such Bonds except that any such option or obligation to tender Bonds shall be ignored and not treated as a principal maturity, if (1) such Bonds are rated in one of the two highest long-term rating categories (without reference to fractions such as "plus" or "minus") by a Rating Agency, (2) the obligation to purchase or to pay such Bonds when tendered is secured by a credit or liquidity facility or a bond insurance policy, or similar arrangement, and (3) any obligation, if any, the City may have, other than its obligation on such Bonds, to reimburse any person for having extended a credit or liquidity facility or a bond insurance policy, or similar arrangement, shall either be subordinated to the obligation of the City to make payments to the Operation and Maintenance Fund and Redemption Fund or be incurred under the conditions and meeting the tests for the issuance of Additional Bonds set forth in Section 22 hereof (assuming for purposes of such tests, if a facility, bond insurance policy, or similar arrangement provides for interest at a variable rate, that the rate to be used for such tests shall be the interest rate at the time of issue);

(iii) if any outstanding Bonds constitute Variable Rate Bonds, the interest rate on such Bonds shall be assumed to be 125% of the greater of (a) the daily average interest rate on such Bonds during the 12 months ending with the month preceding the date of calculation, or such shorter period that such Bonds shall have been outstanding, or (b) the rate of interest on such Bonds on the date of calculation;

(iv) if Additional Bonds will be Variable Rate Bonds, then such Additional Bonds shall be assumed to bear interest at the rate quoted in the Bond Buyer 25 Revenue Bond Index for the last week of the month preceding the date of sale of such Additional Bonds, as published in the Bond Buyer, or if that index is no longer published, another similar index selected by the City or if the City fails to select a replacement index, an interest rate equal to 80% of the yield for outstanding United States Treasury bonds having an equivalent maturity as the Additional Bonds proposed to be issued, or if there are no such Treasury bonds having an equivalent maturity as the additional Bonds proposed to be issued, or if there are no such Treasury bonds having equivalent maturities, 80% of the lowest prevailing prime rate of any of the five largest commercial banks in the United States ranked by assets;

(v) if and so long as an interest-rate guaranty agreement or an interest-rate protection agreement with respect to any Variable Rate Bonds is in effect with an institution that is rated by a Rating Agency in a category that is equal to or higher than the category in which such Variable Rate Bonds are rated, the interest rate on such Bonds shall be assumed to be the lesser of (a) the interest rate determined without regard to this subparagraph (v) and (b) the maximum interest rate to be paid by the City on such Variable Rate Bonds in accordance with such agreement.

(u) "Municipal Obligation" means any bonds or other obligations of any state of the United States of America or of any agency, instrumentality or local governmental unit of any such state (i) which are not callable prior to maturity or as to which irrevocable instructions have been given to the trustee of such bonds or other obligations by the obligor to give due notice of redemption and to call such bonds for redemption on the date or dates specified in such instructions, and (ii) which are secured as to principal and interest and redemption premium, if any, by a fund consisting only of Sufficient cash or Sufficient Government Obligations which fund may be applied only to the payment of such principal of, redemption premium, if any, and interest on such bonds or other obligations on the maturity date or dates thereof or the redemption date or dates specified in the irrevocable instructions referred to in subclause (i) hereof, as appropriate.

(v) "Ordinance" means this Ordinance and any other ordinance amendatory to or supplemental to this Ordinance and shall include any resolution authorizing the sale of a series of Bonds.

(w) "Ordinance No. 517-E" means Ordinance No. 517-E adopted by the City effective on November 9, 1950 as amended and supplemented by the ordinances listed in the preambles hereto.

(x) "Pre-1980 Bonds" means the Sewage Disposal System Revenue Bonds Series A, Series 1969, Series 1970A, Series 1970B, and Series 1979.

(y) "Rating Agency" means Moody's Investors Service and/or Standard and Poor's Corporation, or any successor to either thereof or similar national rating agency if the foregoing do not exist.

(z) "Refund" or "Refunded" means with respect to the Bonds, or any portion thereof specified, the payment thereof, or the provision for payment thereof by the deposit in trust of Sufficient cash, Sufficient Government Obligations, or Sufficient Municipal Obligations, or any combination thereof and with respect to the 517-E Bonds, or any portion thereof specified, the payment thereof, or the provision for payment thereof by the deposit in trust of Sufficient cash or Sufficient Government Obligations or any combination thereof.

(aa) "Refunded Bonds" means the Sewage Disposal System Revenue Bonds Series 1980, Series 1982 and Series 1984 which are being Refunded by the Series 1986 Bonds.

(bb) "Revenues" and "Net Revenues" means the revenues and net revenues of the City from the System and shall be construed as defined in Section 3 of Act 94, including with respect to "Revenues," the earnings derived from the investment of moneys in the various funds and accounts established by this Ordinance, other than the Escrow Fund and other than the Construction Fund for any Fiscal Year the Commissioners do not transfer earnings on the Construction Fund to the Receiving Fund; provided, however that Net Revenues for purposes of Section 10 hereof shall not include such earnings on the Construction Fund.

(cc) "Serial Bonds" means Bonds that are designated Serial Bonds in this Ordinance, in an ordinance authorizing Additional Bonds or in a resolution authorizing sale of any Bonds.

(dd) "Series 1986 Bonds" means the Sewage Disposal System Revenue Refunding Bonds, Series 1986, of the City authorized by this Ordinance.

(ee) "Sufficient" means with respect to (i) cash or (ii) Government Obligations or (iii) Municipal Obligations, or any combination thereof, not redeemable at the option of the issuer, the principal and interest payments upon which, without reinvestment of the interest, come due at such times and in such amounts, as to be fully sufficient to pay the interest as it comes due on the 517-E Bonds or the Bonds or any portion thereof and the principal and redemption premium, if any, on the 517-E Bonds or the Bonds or any portion thereof as they come due whether on the stated maturity date or upon earlier redemption. Securities representing such obligations or cash shall be placed in trust with a bank or trust company, and if any of the Bonds are to be called for redemption prior to maturity, irrevocable instructions to call the Bonds for redemption shall be given to the Transfer Agent.

(ff) "System" means the Sewage Disposal System of the City including all plants, works, instrumentalities and properties, used or useful in connection with the collection, interception, treatment and disposal of sewage, as the same now exists, together with all additions, extensions, repairs and improvements thereto hereafter acquired.

(gg) "Tender Indebtedness" means any Bonds or portions of Bonds a feature of which is an option or requirement, on the part of the bondholders, or an obligation, under the terms of such Bonds, to tender all or a portion of such Bonds to the City, the Trustee, the Transfer Agent or other fiduciary or agent for payment or purchase and requiring that such Bonds or portions of Bonds be purchased if properly presented.

(hh) "Term Bonds" means Bonds that are designated Term Bonds by this Ordinance, an ordinance authorizing Additional Bonds or a resolution authorizing sale of any Bonds.

(ii) "Transfer Agent" means the current official bank of the City as transfer agent selected by the Finance Director pursuant to Section 29 hereof.

(jj) "Transfer Date" means the date on which all of the 517-E Bonds shall be deemed Refunded in accordance with Ordinance No. 517-E.

(kk) "Trustee" means Manufacturers National Bank of Detroit, Detroit, Michigan or any successor thereto.

(ll) "U.S. Treasury Trust Receipts" means evidence of ownership of rights to payment of portions of the principal of or interest on Government Obligations held by a bank or trust company organized under the laws of the United States acting as custodian of such obligations.

(mm) "Variable Rate Bonds" means any Bonds which bear a variable rate of interest.

Section 2. Necessity; Public Purpose. It is hereby determined to be a necessary public purpose of the City to Refund the Refunded Bonds so that the City may reduce

the debt service on obligations payable from the Net Revenues.

Section 3. Payment of All of Refunded Bonds; Series 1986 Bonds Authorized; Issuance of Series 1986 Bonds. To pay part of the cost to Refund all of the Refunded Bonds including payment of bond insurance, if any, underwriters' discount, escrow, agent fees and expenses, legal, financial and other expenses incident thereto and incident to the issuance and sale of the Series 1986 Bonds and to Refund the Refunded Bonds, the City shall borrow the sum of not to exceed One Hundred Twenty Million Dollars (\$120,000,000), as finally determined in the resolution authorizing the sale of the Series 1986 Bonds, and issue the Series 1986 Bonds therefor pursuant to the provisions of Act 94.

Section 4. Series 1986 Bond Details, Issuance in Series. The Series 1986 Bonds shall be designated Sewage Disposal System Revenue Refunding Bonds, Series 1986, shall be payable out of the Net Revenues, as set forth more fully in Section 6 hereof, shall consist of Bonds of the denomination of \$5,000, or multiples of \$5,000 not exceeding the principal amount of Series 1986 Bonds maturing in the applicable years, dated as of December 15, 1986 or such other date as the Council shall approve in the resolution authorizing the sale of the Series 1986 Bonds, numbered in a convenient manner, and shall mature on July 1st in the years 1987 to 2015, inclusive or such of those years as shall be determined in the resolution authorizing the sale of the Series 1986 Bonds; provided however that in accordance with Ordinance No. 517-E the interest and principal becoming due in any Fiscal Year on the Series 1986 Bonds shall not exceed the interest and principal to have been due on the Refunded Bonds in such years until their maturity. For purposes of the preceding sentence, the principal of and interest on the Series 1986 Bonds which mature on the first day of a Fiscal Year shall be deemed to mature on the last day of the preceding Fiscal Year. The Series 1986 Bonds shall bear interest at a rate or rates to be determined in the resolution authorizing sale of the Series 1986 Bonds, but in any event not exceeding 18% per annum, payable on July 1st and January 1st of each year, commencing July 1, 1987, by check drawn on the Transfer Agent and mailed to the registered owner at the registered address, as shown on the registration books of the City maintained by the Transfer Agent. Holders of not less than \$1,000,000 in principal amount of Series 1986 Bonds or more may request wire transfer of interest payments by providing the Transfer Agent prior to the record date with a written notice, including wire address and account number, requesting payment by wire transfer. Interest shall be payable to the registered owner of record as of the 15th day of the month preceding any interest payment date. The date of determination of the registered owner for purposes of payment of interest as provided in this paragraph may be changed by the City to conform to market practice in the future. The principal of the Series 1986 Bonds shall be payable at the Transfer Agent as principal paying agent or at such other co-paying agents as may be designated by the Finance Director upon presentation and surrender of the appropriate Series 1986 Bond at maturity, prior redemption or purchase. The Series 1986 Bonds may be sold at a discount but may not be sold at a price which would make the interest rate of the Series 1986 Bonds, after deducting any premium or adding any discount, exceed the maximum rate permitted by law, as shall be determined by Council in the resolution authorizing the sale of the Series 1986 Bonds.

The Series 1986 Bonds may be subject to redemption prior to maturity at the times and prices and in the manner finally determined by the Council in the resolution authorizing the sale of the Series 1986 Bonds.

In case less than the full amount of an outstanding Series 1986 Bond is called for redemption, the Transfer Agent upon presentation of any Series 1986 Bond called in part for redemption shall register, authenticate and deliver to the registered owner a new Series 1986 Bond in the principal amount of the portion of the original Series 1986 Bond not called for redemption. Notice of redemption shall be given in the manner specified in the form of the Series 1986 Bonds contained in Section 20 of this Ordinance.

Section 5. Execution, Transfer, Registration and Replacement of Bond. The Bonds shall be executed in the name of the City with the facsimile signatures of the Mayor and the Finance Director and shall have a facsimile of the City's seal printed thereon. No Bond shall be valid until authenticated by an authorized representative of the Transfer Agent. The Bonds shall be delivered to the Transfer Agent for authentication and be delivered by the Transfer Agent to the City's Finance Director or designee for delivery to the purchaser(s) or to the purchaser in accordance with instructions from the Finance Director of the City upon payment of the purchase price for the Bonds in accordance with the bid or purchase contract therefor when accepted. Executed blank Bonds for registration and issuance to transferees shall simultaneously, and from time to time thereafter as necessary, be delivered to the Transfer Agent for safekeeping.

Any Bond may be transferred upon the books required to be kept pursuant to this section by the person in whose name it is registered, in person or by his or her duly authorized attorney, upon surrender of the Bond for cancellation, accompanied by delivery of a duly executed written instrument of transfer in a form approved by the Transfer Agent. Whenever any Bond or Bonds shall be surrendered for transfer, the City shall execute and the Transfer Agent shall authenticate and deliver a new Bond or

Bonds, in the same aggregate principal amount, of the same maturity, and bearing the same rate or rates of interest. The Transfer Agent shall require payment by the registered owner requesting the transfer of any Bond of any tax or other governmental charge required to be paid with respect to such transfer. The Transfer Agent shall not be required (i) to issue, register the transfer of or exchange any Bond during a period beginning at the opening of business 15 days before the day of the giving of a notice of redemption of Bonds selected for redemption and ending at the close of business on the day of giving of that notice, or (ii) to register the transfer of or exchange any Bond so selected for redemption in whole or in part, except the unredeemed portion of Bonds being redeemed in part.

The Transfer Agent shall keep or cause to be kept, at its principal office, sufficient books for the registration and transfer of the Bonds, which shall at all times be open to inspection by the City; and, upon presentation for such purpose, the Transfer Agent shall, under such reasonable regulations as it may prescribe, transfer or cause to be transferred, on said books, Bonds as hereinbefore provided.

If any Bond shall become mutilated, the City, at the expense of the registered owner of the Bond, shall execute, and the Transfer Agent shall authenticate and deliver, a new Bond of like tenor in exchange and substitution for the mutilated Bond, upon surrender to the Transfer Agent of the mutilated Bond. If any Bond shall be lost, destroyed or stolen, evidence of ownership of the Bond and of the loss, destruction or theft may be submitted to the Transfer Agent and, if this evidence is satisfactory to the City and the Transfer Agent and indemnity satisfactory to the Transfer Agent and the City shall be given, and if all requirements of any applicable law including Act 354 have been met, the City, at the expense of the owner, shall execute, and the Transfer Agent shall thereupon authenticate and deliver, a new Bond of like tenor and bearing the statement required by Act 354, or any applicable law hereafter enacted, in lieu of and in substitution for the Bond so lost, destroyed or stolen. If any such Bond shall have matured or shall be about to mature, instead of issuing a substitute Bond the Transfer Agent may pay the same without surrender thereof as authorized by Act 354.

Section 6. Payment of Bonds, Defeasance. The Bonds and the interest thereon shall be payable solely from the Net Revenues (except to the extent payable from the proceeds of bond insurance or other credit enhancement or from the proceeds of Bonds), and to secure such payment, there is hereby created a statutory lien upon the whole of the Net Revenues which shall be a first lien, subject only to the lien rights created for the 517-E Bonds by Ordinance No. 517-E as herein provided (the "Prior Lien"), to continue until payment in full of the principal of and interest on all Bonds payable from the Net Revenues, or, until Sufficient cash, Sufficient Government Obligations, Sufficient Municipal Obligations or any combination thereof shall have been deposited in trust for payment in full of the principal of and the interest on all Bonds to be paid or defeased to their maturity, or, if called or if irrevocable instructions have been given to call for redemption, to the date fixed for redemption together with the amount of the redemption premium, if any. Upon deposit of Sufficient cash, Sufficient Government Obligations, Sufficient Municipal Obligations or any combination thereof, as provided in the previous sentence, the statutory lien herein created shall be terminated with respect to the Bonds to be defeased, the holders of these Bonds shall have no further rights under this Ordinance except for payment from the deposited funds and for rights of replacement, registration and transfer, and such Bonds shall no longer be considered to be outstanding under this Ordinance.

The Prior Lien secures the payment of the principal of and interest on the 517-E Bonds. Pursuant to Section 17 hereof, sufficient proceeds of the Series 1986 Bonds shall be deposited in the Escrow Fund to Refund the Refunded Bonds as they come due. Pursuant to Ordinance No. 517-E, the Bonds and the 517-E Bonds (other than those which have been deemed Refunded) shall be equally and ratably payable from the Net Revenues unless and until moneys or securities pledged to Refund 517-E Bonds are not sufficient for any reason to pay such bonds when due, in which event the claim of the 517-E Bonds to the Net Revenue and the Funds and Accounts of the System shall be superior and prior to the claim of the Bonds to the extent of such insufficiency. The City and the Transfer Agent are authorized to segregate funds or create sub-accounts in the funds of the System to effect such priority as provided in Ordinance No. 517-E.

Section 7. Bondholders' Rights; Receiver. The registered owner or owners of the Bonds representing in the aggregate not less than twenty per cent (20%) of the entire principal amount thereof then outstanding, may, by suit, action, mandamus or other proceedings, protect and enforce the statutory lien upon the Net Revenues, and may, by suit, action, mandamus or other proceedings, enforce and compel performance of all duties of the officers of the City under this Ordinance, Act 94 and any other applicable provisions of law, including the fixing of sufficient rates, the collection of Revenues, the proper segregation of the Revenues of the System and the proper application thereof. The statutory lien upon the Net Revenues, however, shall not be construed as to compel the sale of the System or any part thereof.

If there is a default in the payment of the principal of or interest upon the Bonds, any court having jurisdiction in any proper action may appoint a receiver to administer and operate the System on behalf of the City and under the direction of the court, and by and with the approval of the court to perform all of the duties of the officers of the City more particularly set forth herein and in Act 94.

The registered owner or owners of the Bonds shall have all other rights and remedies given by Act 94 and law, for the payment and enforcement of the Bonds and the security therefor.

Section 8. Municipal Bond Insurance or other Credit Enhancement. The Finance Director may obtain municipal bond insurance or other credit enhancement in respect of all or part of the Series 1986 Bonds or any Additional Bonds which, if obtained, shall be provided for in the resolution authorizing the sale of the Series 1986 Bonds or any Additional Bonds. Such municipal bond insurance or other credit enhancement may only insure or secure certain Bonds and may or may not insure or secure any other series of Bonds or any part thereof. Such municipal bond insurer or other credit enhancement provider may be afforded certain rights and remedies to direct the proceedings with respect to the enforcement of payment of the Bonds as shall be provided in the resolution authorizing the sale of the Series 1986 Bonds or Additional Bonds.

The City may at any time fulfill its obligation to fund the Bond Reserve Account by acquiring for the benefit of the Bond Reserve Account an irrevocable surety bond payable on any interest or interest and principal payment date in an amount which, when added to any other funds in the Bond Reserve Account, equals the Bond Reserve Requirement. Before any such surety bond is substituted for moneys or applied in lieu of moneys within the Bond Reserve Account, there shall be filed with the Commissioners (i) an opinion of nationally recognized bond counsel to the effect that such substitution will not adversely affect the tax-exempt status of interest on any Bonds; (ii) evidence that such surety bond is provided by an insurance company rated by each Rating Agency then rating the Bonds to the effect that if the issuers of the surety bond were insuring payment of principal and interest on the Bonds to which the Bond Reserve Account relates, such Bonds would receive the highest rating available from each such Rating Agency; (iii) a copy of the surety bond; and (iv) an opinion of counsel satisfactory to said nationally recognized bond counsel to the effect that the surety bond is valid and enforceable in accordance with its terms. Each such surety bond shall be unconditional and irrevocable and shall provide liquidity for the Bonds with respect to which the surety bond is purchased and, if the surety bond is purchased with respect to more than one issue of Bonds, then for the term of all the then outstanding Bonds for which the surety bond is purchased. So long as the amount to the credit of the Bond Reserve Account equals the Bond Reserve Requirement, any reimbursement or other agreement entered into between the City and issuer of any such surety bond may provide that the City will be obligated to repay such issuer an amount equal to any draw-down on the surety bond on a subordinated basis as set forth below, plus a market rate of interest but not in excess of the maximum rate permitted by law over a specified period of time.

The City reserves the right, if it deems it necessary in order to acquire such a surety bond, to amend this Ordinance without the consent of any of the Bondholders in the following respects:

(i) to provide that repayment of any draw-down under such surety bond shall be secured by a lien on the Revenues subordinate only to payments into the Operation and Maintenance Fund and payments into the Redemption Fund (including the Bond Reserve Account); and

(ii) to grant to the issuer of said surety bond such additional rights as it may request, provided that such amendment shall not, in the written opinion of nationally recognized bond counsel filed with the Commissioners, impair or reduce the security or rights hereby granted to the owners of the 517-E Bonds or the Bonds or any of them.

Section 9. Management. The operation, repair and management of the System shall remain under the supervision and control of the Commissioners in the manner provided in Article 7, Chapter 15 of the Charter of the City subject to the rights, powers and duties in respect thereto which are reserved by law and the City Charter to the City Council.

Section 10. Fixing and Revising Rates; Rate Covenants. The rates for sewage disposal service and the regulations for the collection thereof now in effect, shall remain in full force and effect and shall be the rates and regulations required to be established by Act 94. The rates presently in effect are estimated to be sufficient to provide for the payment of the interest upon and the principal of all 517-E Bonds and Bonds to be payable from the Revenues following the delivery of the Series 1986 Bonds as and when the same become due and payable, to provide for the creation and maintenance of a reserve therefor as required by Ordinance No. 517E (or, after the Transfer Date, as required by this Ordinance), to provide for the payment of the expenses of administration and operation and such expenses for maintenance of the System as are necessary to preserve the same in good repair and working order, and to provide for such other

requirements, expenditures and funds for the System as Ordinance No. 517-E, this Ordinance and Act 94 may require. After the Transfer Date, such rates shall be fixed and revised from time to time as may be necessary to produce the greater of (1) the amounts hereinbefore set forth in this Section 10 or (2) an amount so that the Net Revenues during each Fiscal Year are projected at the beginning of such Fiscal Year to be equal to not less than 125% of the annual principal and interest requirements coming due during such Fiscal Year on all Bonds, and the City hereby covenants and agrees at all times to fix and maintain such rates for services furnished by the System as shall be sufficient to provide for the foregoing. For purposes of this paragraph principal of and interest on Bonds which mature on the first day of any Fiscal Year shall be deemed to mature on the last day of the immediately preceding Fiscal Year.

The charges for sewage disposal service which are under the provisions of Section 21 of Act 94 made a lien on all premises served thereby, unless notice is given that the tenant is responsible, are hereby recognized to constitute such lien and whenever any such charge against any premises shall be delinquent for six (6) months, the City official or officials in charge of the collection thereof may certify to the tax-assessing officer of the City not later than April 1 of each year the fact of such delinquency, whereupon such charge shall be entered upon the next tax roll as a charge against such premises and the lien thereof enforced in the same manner as general City taxes against such premises are collected and the lien thereof enforced; provided, however, where notice is given that a tenant is responsible for such charges and service as provided by said Section 21 of Act 94, no further service shall be rendered such premises until a cash deposit equal to the estimated amount of the next ensuing bill shall have been made as security for payment of such charges and services.

In addition to other remedies provided, the City shall have the right to shut off and discontinue the supply of water to any premises for the non-payment of sewage disposal rates, when due.

Section 11. No Free Service or Use; Metered Service. No free service or use of the System, or service or use of the System at less than cost, shall be furnished by the System to any person, firm or corporation, public or private, or to any public agency or instrumentally including the City or any other municipality.

Section 12. Operating and Fiscal Year. The System shall be operated on the basis of the Fiscal Year.

Section 13. Funds and Accounts; Flow of Funds. Prior to the Transfer Date, Revenues shall be set aside as collected and credited to the Funds and Accounts as provided in Ordinance No. 517-E. Commencing on the Transfer Date, all Revenues shall be set aside as collected and credited to a fund to be designated Sewage Disposal System Receiving Fund (the "Receiving Fund"). In addition, except as otherwise provided herein, on the Transfer Date all moneys in any funds or accounts of the System established by Ordinance No. 517-E which are not deposited in an escrow fund to be used to Refund 517-E Bonds shall be transferred to the Receiving Fund and credited to the funds and accounts as provided in this Section 13. The Council in the ordinance or resolution establishing the Transfer Date shall determine the amount of moneys which, on the Transfer Date, are to be deposited into such escrow fund, if any, from the various funds and accounts established by Ordinance No. 517-E and Bond proceeds, and the amount therefrom to be deposited into the Receiving Fund or other funds or accounts of the System. After the Transfer Date, the Revenues credited to the Receiving Fund are pledged for the purpose of the following funds and shall be transferred or debited from the Receiving Fund periodically in the manner and at the times and in the order of priority hereinafter specified:

A. OPERATION AND MAINTENANCE FUND:

Out of the Revenues credited to the Receiving Fund there shall be first set aside in, or credited to, a fund designated OPERATION AND MAINTENANCE FUND (the "Operation and Maintenance Fund"), on the Transfer Date a sum sufficient to provide for payment of the expense of administration and operation of the System and such current expense for the maintenance thereof as may be necessary to keep the same in good repair and working order for the balance of the month in which the Transfer Date occurs and thereafter monthly, commencing with the month in which the Transfer Date occurs, a sum sufficient to provide for the payment of the next month's expenses of administration and operation of the System and such current expenses for the maintenance thereof as may be necessary to preserve the same in good repair and working order.

B. BOND AND INTEREST REDEMPTION FUND:

There shall be established and maintained a separate depository fund designated Bond and Interest Redemption Fund (the "Redemption Fund"), the moneys on deposit therein from time to time to be used solely for the purpose of paying the principal of, redemption premiums (if any) and interest on the Bonds. The moneys in the Redemption Fund (including the Bond Reserve Account) shall be kept on deposit with one of the banks or trust companies where the principal of and interest on the Bonds are payable, i.e., the Transfer Agent or a transfer agent for Additional Bonds.

Out of the Revenues remaining in the Receiving Fund, after provision for the Operation and Maintenance Fund, there shall be set aside monthly in the Redemption

Fund a sum proportionately sufficient to provide for the payment when due of the current principal of and interest on the Bonds, less any amount in the Redemption Fund representing accrued interest received on the Bonds or capitalized interest on the Bonds as may be appropriate or moneys transferred from the Bond and Interest Redemption Fund established by Ordinance No. 517-E on the Transfer Date. Commencing the month in which the Transfer Date occurs, the amount set aside each month for interest on the Bonds after taking into account moneys in the Redemption Fund as above provided shall be 1/6 of the total amount of interest on the Bonds next coming due on each series of Bonds or such greater or lesser amount in approximately equal monthly installments necessary to accumulate the amount of interest next coming due on each series of Bonds by the date such interest is to be paid which is not to be paid from other sources. The amount set aside each month for principal after taking into account moneys in the Redemption Fund as above provided, commencing the month in which the Transfer Date occurs, shall be 1/12 of or such greater or lesser amount in approximately equal monthly installments necessary to accumulate the amount of principal coming due on each series of Bonds by the date such principal is to be paid. If there is any deficiency in the amount previously set aside, that deficiency shall be added to the next succeeding month's requirements.

There is hereby established in the Redemption Fund a separate account to be known as the Bond Reserve Account, into which shall be deposited on the Transfer Date, (i) such moneys or securities then on deposit in the bond reserve account established under Ordinance No. 517-E, and (ii) such moneys from the proceeds of sale of Bonds then delivered, if any, as determined by the Council in the resolution authorizing the sale of such Bonds, after the set aside provided in clause (i), that will equal the Bond Reserve Requirement. Thereafter, from the Revenues remaining in the Receiving Fund after provision has been made for the Operation and Maintenance Fund and the Redemption Fund, there shall be deposited in the Bond Reserve Account each month an amount equal to the balance in the Receiving Fund or the amount necessary to accumulate and maintain in said Bond Reserve Account a sum equal to the Bond Reserve Requirement, whichever is lesser. Except as otherwise provided herein, moneys in the Bond Reserve Account shall be used solely for the payment of the principal of and interest on Bonds as to which there would otherwise be default.

Notwithstanding the foregoing provisions of this Section 13B, the City reserves the right to establish a separate Bond Reserve Account for each or any issue of Additional Bonds. Any such separate Bond Reserve Account may contain either cash or investments permitted by this Ordinance for a Bond Reserve Account, an insurance policy or any other form of security deemed advisable by the City and the purchasers of such Additional Bonds but only if such separate Bond Reserve Account is fully equal to the Bond Reserve Requirement for the issue of Additional Bonds to which it pertains at the time such Additional Bonds are issued. The amounts to be paid into each separate Bond Reserve Account to restore it to its Bond Reserve Requirement shall be made on a parity with payments into all other Bond Reserve Accounts and shall not exceed, in any Fiscal Year, its Proportionate Deficit Payment. "Proportionate Deficit Payment" for a separate Bond Reserve Account means an amount which bears to the deficit in such a separate Bond Reserve Account the same proportion that the amount available to remedy deficits in all separate Bond Reserve Accounts bears to the aggregate deficit in all separate Bond Reserve Accounts.

No further payments need be made into the Redemption Fund after enough of the Bonds have been retired so that the amount then held in said Fund, including the Bond Reserve Account, is equal to the entire amount of principal and interest which will be payable at the time of maturity of all the then outstanding Bonds.

If at any time, the amount on deposit in or credited to the Bond Reserve Account exceeds the Bond Reserve Requirement, the amount of such excess shall be transferred therefrom and deposited in or credited to the Receiving Fund.

Unless a surety bond is provided therefor in accordance with Section 8 hereof, there shall be deposited in the Bond Reserve Account from the proceeds of the sale of each issue of Additional Bonds the lesser of (i) the amount which, when added to the amount on deposit therein on the date of delivery of such issue of Additional Bonds will equal the Bond Reserve Requirement for all Bonds then outstanding including such Additional Bonds or (ii) the maximum permitted by the Code.

There shall be established in the Redemption Fund under Ordinance No. 517-E an account to be designated "Term Bond Sinking Fund Account" (the "Sinking Fund") which account shall be transferred on the Transfer Date to the Redemption Fund created hereunder. There shall be credited to said Sinking Fund the amounts required to be deposited in the Redemption Fund to meet the next due Mandatory Redemption Requirement for the Bonds that are Term Bonds becoming due within the next twelve months.

A Mandatory Redemption Requirement for a series of Term Bonds may be satisfied by the call of Term Bonds of the same maturity in the principal amount of the Mandatory Redemption Requirement at par and accrued interest or by the purchase and surrender to the Transfer Agent of Term Bonds of the same term maturity from moneys

allocated therefor in the Sinking Fund of the Redemption Fund, as provided herein, or purchased with other funds legally available therefor. The City shall elect the manner in which it intends to satisfy a Mandatory Redemption Requirement not less than forty days prior to the due date of each Mandatory Redemption Requirement.

The moneys so credited to the Sinking Fund shall be used to satisfy the next Mandatory Redemption Requirement for Bonds that are Term Bonds either by (a) redeeming said Term Bonds on the following Mandatory Redemption Date, or (b) by purchasing Term Bonds of the same maturity with respect to which the Mandatory Redemption Requirement applies and surrendering the same to the Transfer Agent for cancellation on or prior to the required Mandatory Redemption Date. In the event that after any Mandatory Redemption Date moneys remain in the Redemption Fund credited to the Sinking Fund as a result of the purchase of Term Bonds at less than par, the amount of such excess may be transferred to the Receiving Fund. If no Bonds are issued as Term Bonds then there shall be no Mandatory Redemption Requirement with respect to the Bonds and the Term Bond Sinking Fund shall be disestablished.

C. JUNIOR LIEN BOND AND INTEREST REDEMPTION FUND:

If the City shall ever issue Junior Lien Bonds, there shall be established and maintained a separate depository fund for the purpose of paying the principal redemption premiums, if any, and interest on such Junior Lien Bonds as they come due. Revenues remaining in the Receiving Fund after provision for the requirements of the Operation and Maintenance Fund and Redemption Fund including the Bond Reserve Account shall be set aside, but not more often than monthly, in such fund for the Junior Lien Bonds in accordance with the ordinance authorizing the issuance of the Junior Lien Bonds. Additionally, a separate account may also be established within such fund as a bond reserve account to be funded on a junior lien basis in accordance with the ordinance authorizing the issuance of the Junior Lien Bonds. The detail of the establishment and maintenance of such fund shall be provided in the ordinance of the Council authorizing the issuance of such Junior Lien Bonds.

D. EXTRAORDINARY REPAIR AND REPLACEMENT RESERVE FUND:

On the Transfer Date, all funds shall be transferred from the Extraordinary Repair and Replacement Reserve Fund established under Ordinance No. 517-E to a separate depository account hereby established, to be designated Extraordinary Repair and Replacement Reserve Fund. Beginning the first day of the month following the Transfer Date, out of the Revenues remaining after meeting the monthly requirements of the foregoing funds, there shall be deposited monthly into the Extraordinary Repair and Replacement Fund, so long as the balance of such Fund is less than the Requirement (as hereinafter defined) due to reasons other than withdrawal for major unanticipated repairs and replacement as provided below, 1/12 of three percent (3%) of the budgeted operation and maintenance expense of the System for the Fiscal Year in which the set aside is made. Revenues shall be deposited into this Fund until the total amount of money accumulated in such Fund equals an amount not less than fifteen percent (15%) of the then current Fiscal Year's budgeted operation and maintenance expense of the System (the "Requirement"). Once the amount accumulated in this Fund equals or exceeds the Requirement, such monthly deposits to such Fund may cease. The money deposited in said Fund shall be used only for the purpose of paying the costs of making major unanticipated repairs and replacements to the System which individually have cost or are reasonably expected to cost in excess of One Million Dollars as determined by the Commissioners or to reimburse the City for any amounts advanced for such purposes. The deposits required hereby shall be mandatory and cumulative. Earnings on this Fund shall be transferred to the Receiving Fund. Any moneys of this Fund withdrawn to be used to pay the costs of a major unanticipated repair or replacement to the System which have not been repaid to the Fund at the end of the second Fiscal Year following such withdrawals, after meeting the requirements of subparagraphs A, B and C of this Section, shall be repaid by depositing Revenues in the amount of 1/12 of three percent (3%) of the budgeted operation and maintenance expense of the System for the Fiscal Year in which the deposit is made until the amount in the Fund equals the Requirement. If all deposits and repayments have been made as required hereinabove, and all borrowings from prior Fiscal Years, as hereinbelow provided, have been repaid, on or after the first day of each Fiscal Year the City may borrow, for transfer to and use from the Improvement and Extension Fund hereinafter created up to fifty percent (50%) in aggregate of the balance in this Fund on the first day of such Fiscal Year. Any such borrowings shall be repaid before any deposits are made to the Improvement and Extension Fund or Surplus Fund created hereinafter. The City shall fix rates and charges for the services supplied by the System sufficient to permit it to meet its obligations under this subsection.

E. IMPROVEMENT AND EXTENSION FUND:

There shall be established and maintained a separate depository account designated Improvement and Extension Fund. On the Transfer Date, all funds which are not transferred to an escrow fund to be used to Refund 517-E Bonds, as determined by the Council in the resolution establishing the Transfer Date, shall be transferred from the Improvement and Extension Fund established by Ordinance No. 517-E to the

Improvement and Extension Fund created hereunder. Out of the Revenues remaining in the Receiving Fund after meeting the requirements of the Operation and Maintenance Fund, the Redemption Fund, including the Bond Reserve Account, and fund created for the benefit of Junior Lien Bonds and the Extraordinary Repair and Replacement Reserve Fund, if any, there shall be deposited into the Improvement and Extension Fund, in any month, such sums as the Commissioners may deem advisable, to be used for improvements, enlargements, repairs, extensions or betterment to the System.

In expending any funds from the Improvement and Extension Fund or in transferring any funds to the Surplus Fund, the Commissioners shall take into account any funds which may be necessary to compensate for any future rate adjustments due to overpayments received in prior years. The Commissioners are authorized to transfer any moneys from the Improvement and Extension Fund to the Receiving Fund or the Operation and Maintenance Fund as are necessary to effect such account.

F. SURPLUS FUND:

Money remaining in the Receiving Fund at the end of any Fiscal Year, after satisfaction of the requirements of the foregoing funds, shall be transferred to a separate depository account designated the Surplus Fund. Moneys from time to time on hand in the Surplus Fund may, at the option of the Commissioners, be used and applied for any of the purposes related to the System for which the foregoing funds and accounts were established or for any other lawful purpose of the System; provided, however, that if there should be any deficit in the Operation and Maintenance Fund or the Redemption Fund (including the Bond Reserve Account), and funds or accounts created for the benefit of Junior Lien Bonds, then transfers shall be made from the Surplus Fund to such funds in the priority and order named, to the extent of any such deficit.

Section 14. Depositary and Funds on Hand. Moneys in the several funds and the accounts established pursuant to this Ordinance, except moneys in the Escrow Fund established below, the Redemption Fund (including the Bond Reserve Account) and the Construction Fund, may be kept in one or more bank accounts at a bank or banks designated by the Finance Director, and if kept in one bank account the moneys shall be allocated on the books and records of the City in the manner and at the times provided in this Ordinance. The depository of all funds and accounts, except as otherwise specifically provided for herein, shall be those banks or trust companies designated from time to time as such by the Finance Director of the City.

Section 15. Priority of Funds. In the event the moneys in the Receiving Fund are insufficient to provide for the current requirements of the Operation and Maintenance Fund and the Redemption Fund, any moneys or securities in other funds of the System (except moneys in the Escrow Fund and Construction Fund) shall be credited or transferred, first, to the Operation and Maintenance Fund and second, to the Redemption Fund, to the extent of any deficit therein.

Section 16. Investments. Except as herein otherwise provided, moneys in the funds and accounts established herein and moneys derived from the proceeds of sale of the Series 1986 Bonds, may be invested by the City in Investment Obligations. Investment of moneys in the Redemption Fund being accumulated for payment of the next maturing principal or interest payment of the Bonds shall be limited to Government Obligations or other Investment Obligations which are permitted under Act 94, bearing maturity dates on or prior to the date of the next maturing principal and/or interest payment date on the Bonds. Investment of the proceeds of Additional Bonds and any other funds deposited into an escrow fund to Refund Bonds shall be in cash or Government Obligations or Municipal Obligations in the manner established in the ordinance authorizing the issuance of such Additional Bonds. Investment of the proceeds of the Series 1986 Bonds and any other funds deposited in the Escrow Fund shall be as provided in Section 17. Investment of moneys in the Bond Reserve Account shall be limited to obligations bearing maturity dates or subject to redemption, at the option of the holder thereof, not later than ten years from the date of the investment. In the event investments are made, any securities representing the same shall be kept on deposit with the bank or trust company having on deposit the fund or funds or account from which the purchase was made. Profit realized or interest income earned on investment of funds in the Receiving Fund, Operation and Maintenance Fund, Redemption Fund (including the Bond Reserve Account), the Extraordinary Repair and Replacement Reserve Fund and Improvement and Extension Fund shall be deposited in or credited to the Receiving Fund. Profit realized or interest earned on investments of funds in the Construction Fund and the Escrow Fund or any other escrow fund shall be deposited in or credited as received to the funds from which such investments were made; provided, however, that profit realized or interest earned on the Construction Fund may, if permitted by law, be deposited in the Receiving Fund at the option of the Commissioners. Except as otherwise herein provided, investments shall mature at such times as it is estimated the funds therefrom will be required, but shall be limited to obligations bearing maturity dates or subject to redemption, at the option of the holder thereof, not later than five years from the date of investment. Investments credited to the Bond Reserve Account shall be valued as of the Transfer Date at the market value thereof, and thereafter shall be valued at least annually on each January 1 beginning

the first January 1 after the Transfer Date at par or at amortized value if purchased at other than par. Amortized value when used with respect to an obligation purchased or transferred on the Transfer Date at a premium above or discount below par, means the value as of any given time obtained by dividing the total premium or discount at which such obligation was purchased or transferred by the number of days remaining to maturity on such obligation at the date of such purchase or transfer and by multiplying the amount thus calculated by the number of days having passed since such purchase or transfer; and (1) in the case of an obligation purchased or transferred at a premium by deducting the product thus obtained from the purchase price, and (2) in the case of an obligation purchased or transferred at a discount by adding the product thus obtained to the purchase price. The City shall withdraw from the Bond Reserve Account any excess immediately and, in the event of a deficit, budget such additional deposits for the next Fiscal Year in amounts necessary to restore the Bond Reserve Account to the Bond Reserve Requirement and there shall be credited to the Bond Reserve Account after providing for the current requirements of the Operation and Maintenance Fund and the Redemption Fund all Revenues remaining in the Receiving Fund until the amount credited to the Bond Reserve Account is equal to the Bond Reserve Requirement. Investments in the Extraordinary Repair and Replacement Reserve Fund shall be valued at least annually on each July 1 beginning the first July 1 after the Transfer Date, at the cost thereof.

Section 17. Series 1986 Bond Proceeds. From the proceeds of the sale of the Series 1986 Bonds there shall be immediately deposited in the Redemption Fund created under Ordinance No. 517-E an amount equal to the accrued interest and premium, if any, received on the delivery of the Series 1986 Bonds and the City may take credit for the amount so deposited against the amount required to be deposited in the Redemption Fund for payment of the next maturing interest on the Series 1986 Bonds. There shall next be deposited in the bond reserve account established under Ordinance No. 517-E an amount sufficient when added to any moneys or securities in such bond reserve account and any other deposits made by the City to meet the Bond Reserve Requirement, but not in excess of the maximum permitted by the Code.

There shall next be deposited in an escrow fund (the "Escrow Fund"), Sufficient cash and/or Sufficient Government Obligations which shall be used to pay the principal of, interest and redemption premiums, if any, on the Refunded Bonds as they become due at maturity or earlier redemption and, except as otherwise herein provided, shall be used only for such purposes. The Escrow Fund shall be held by an escrow agent (the "Escrow Agent") in trust pursuant to an escrow deposit agreement (the "Escrow Agreement"), which Escrow Agreement shall irrevocably direct the Escrow Agent to take all necessary steps to pay the principal of and interest and redemption premiums, if any, on the Refunded Bonds when due and if so determined in the resolution of Council authorizing the sale of the Series 1986 Bonds, to call the Refunded Bonds in whole or in part for redemption, as specified in the Escrow Agreement. Any balance remaining in the Escrow Fund after payment in full of principal of and redemption premium, if any, and interest on the Refunded Bonds shall be applied as provided in the Escrow Agreement.

The Escrow Agent under the Escrow Agreement shall be the paying agent for the Refunded Bonds and the Council shall, in the resolution authorizing the sale of the Series 1986 Bonds, authorize the form of and execution of the Escrow Agreement for and on behalf of the City.

The balance from the proceeds of the Series 1986 Bonds shall be deposited in a separate subaccount in the Improvement and Extension Fund and used to pay the costs of issuance of the Series 1986 Bonds and the costs of refunding the Refunded Bonds.

Section 18. Construction Fund. The portion of the proceeds of the sale of a series of Bonds issued for the purpose of purchasing, acquiring, constructing, improving, enlarging or extending additions and improvements of the System, as determined by the Council in the resolution authorizing the sale of the such Bonds, shall be deposited in the Construction Fund in separate accounts for each series of Bonds which shall be established and maintained as separate depository accounts with a depository qualified to be a depository of moneys under Michigan law as designated by the Finance Director. In addition, subaccounts may be created for the deposit of moneys other than Bond proceeds to better account for the expenditure of Bond proceeds. Moneys in the Construction Fund or account or subaccount thereof shall be applied solely in payment of the cost of any project financed thereby and any costs of engineering, legal, bond insurance premiums, if any, credit enhancement fees, if any, and other expenses incident thereto, to the financing thereof as determined in the resolution authorizing sale of such Bonds. Payments for construction, either on account or otherwise, shall not be made unless the registered engineer in charge of such work shall file with the Commissioners a signed statement to the effect that the work has been completed in accordance with the plans and specifications therefor, that it was done pursuant to and in accordance with the contract therefor, that such work is satisfactory and that such work has not been previously paid for. Payment of the cost of engineering, legal, financial, bond insurance premium, credit enhancement fees, etc., as provided in this

section shall be made upon submission of appropriate documentation to the Finance Director of the City.

Section 19. Trustee. In addition, in order to further assure prompt compliance with all of the requirements, duties and obligations of the City with respect to the System and the Bonds in accordance with and as authorized by Section 38 of Act 94, the Council in the resolution authorizing the sale of Series 1986 Bonds shall appoint and designate a Trustee, to perform the duties hereinafter described. The City covenants and agrees that at the time following the Transfer Date that each monthly deposit or payment is made to the Redemption Fund, in accordance with Section 13(B) of this Ordinance, it will file with the Trustee within 10 days after the deposit or payment a certificate signed by the chief accounting officer of the System setting forth, (i) the date of such payment or deposit, (ii) the amount of such payment or deposit, (iii) the purpose or purposes of such payment or deposit, (iv) that such payment or deposit has been made from Revenues or, if not derived from the Revenues, the source of such payment or deposit, and (v) that the monthly deposit to the Operation and Maintenance Fund, established by Section 13(A) of this Ordinance, for the same month that the foregoing deposit was made, has been made from the Revenues and, if not so made, the source of such payment. There shall be attached to such certificate written statements from the banks receiving such deposits or payments to the Redemption Fund and the Operation and Maintenance Fund, setting forth the date, amount and purpose of each such deposit or payment. The City further covenants that it will cause a copy of the annual audit of the System as required by Section 21(c) of this Ordinance, or other provisions of law, to be filed with the Trustee promptly upon completion thereof and in any event no later than six months following the close of the Fiscal Year to which such audit pertains and will further cause a copy of the annual budget for the System for each Fiscal Year to be filed with the Trustee not more than twenty (20) days after its adoption. In the event that the City shall at any time fail to file with the Trustee any of the foregoing monthly certificates, the annual audit or the annual budget required by this Ordinance or if any of the monthly certificates shall fail to show that the deposits to the Operation and Maintenance Fund or the Redemption Fund are made from Revenues or if the annual audit or budget shall show that the rates in effect for the period covered by such audit or budget failed or may fail to produce Revenues in the amounts required by Section 10 of this Ordinance, or if the Trustee becomes aware of any failure on the part of the City to comply with any other covenant or requirement in this Ordinance or of Act 94, the Trustee shall give written notice of such failure to the City by causing such notice to be either personally served on or mailed by registered or certified mail to the Commissioners and the Finance Director of the City. The notice shall specify the requirements or covenants which the City has failed to meet and shall request the City to take corrective steps to remedy such failure. If the City does not take and diligently pursue action to remedy such failure within ninety (90) days from service of the foregoing notice, the Trustee shall cause an appropriate notice of the foregoing failure and the failure of the City to correct the same, to be published for four consecutive weeks in a financial journal circulating in both the City of Detroit, Michigan and the City of New York, New York. In addition said notice shall be mailed by first class mail by the Trustee to the holders of Bonds at the address shown for such holders on the registration books kept by the City and the City covenants and agrees that it will supply or will cause the Transfer Agent to supply the names and addresses of all holders to the Trustee promptly upon request therefor made by the Trustee. Thereafter, in the event that the holder or holders of Bonds representing in the aggregate not less than 20% of all Bonds payable from the Revenues then outstanding, shall request the Trustee in writing, the Trustee may by suit, action, mandamus or other proceedings enforce and compel the performance of all of the duties of the City required by this Ordinance, Act 94 or other provisions of law with respect to the Bonds. All fees, costs and expenses of the Trustee in performing its duties and obligations under this Ordinance, including but not limited to all costs and expenses of any legal proceedings that may be brought by the Trustee in connection with such duties and obligations and any moneys advanced by holders to the Trustee for such costs and expenses shall be paid by the City to the Trustee or the holders, or both, as the case may be, in the first instance from the Revenues, but only after providing for all requirements of the Operation and Maintenance Fund and the Redemption Fund (including the Bond Reserve Account therefor) and Junior Lien Fund as provided by Section 13 of this Ordinance, and, to the extent that sufficient moneys are not available from the Revenues therefor, from general funds of the City. In the event that general funds of the City are used to pay any such costs and expenses, the City shall be reimbursed therefor with interest at the rate of 7% per annum from the first Revenues not required to meet the requirements of said Operation and Maintenance Fund, the Redemption Fund (including the Bond Reserve Account therefor), any redemption fund including any bond reserve account for Junior Lien Bonds or to reimburse the Trustee or bondholders as herein provided. The Trustee is authorized to act in reliance upon the sufficiency, correctness, genuineness or validity of any instrument or document or other writing submitted to it hereunder and shall have no liability with respect to said matters. The Trustee shall not be liable for any error in judgment or any act done or omitted by it

in good faith. In the event of any dispute or question arising hereunder the Trustee shall not be liable if it acts or takes no action in accordance with the opinion of its legal counsel.

In the event the holders of outstanding Bonds shall so direct the Trustee in writing to exercise one or more of the remedies specified in this Ordinance or in Act 94, the Trustee shall be under no obligation to proceed to enforce or compel the performance of the duties and obligations of the City under this Ordinance unless and until the holders shall have reasonably indemnified the Trustee for all estimated costs and expenses in the exercise of said remedies, including necessary attorneys' fees.

Section 20. Series 1986 Bond Form. The Series 1986 Bonds shall be in substantially the following form, with such changes and additions as shall be determined appropriate by the Finance Director:

UNITED STATES OF AMERICA
STATE OF MICHIGAN
COUNTY OF WAYNE
CITY OF DETROIT
SEWAGE DISPOSAL SYSTEM REVENUE REFUNDING BOND SERIES 1986
Interest Rate Maturity Date Date of Original Issue CUSIP
December 15, 1986

REGISTERED

PRINCIPAL AMOUNT:

The CITY OF DETROIT, County of Wayne, State of Michigan (the "City"), for value received, hereby promises to pay the principal amount shown above to the Registered Owner specified above on the Maturity Date specified above with interest thereon from the Date of Original Issue specified above until paid at the Interest Rate per annum specified above, payable on _____, 1, 1987, and semiannually thereafter. Principal of this bond is payable at the principal office of _____ or such other transfer agent as the City may hereinafter designate by notice mailed to the registered owner not less than 60 days prior to any interest payment date (the "Transfer Agent"). Interest on this bond is payable to the registered owner of record as of the 15th day of the month next preceding the payment date as shown on the registration books kept by the Transfer Agent by check or draft mailed to the registered owner at the registered address or, for registered owners of not less than \$1,000,000 in principal amount, by wire transfer if such registered owners request such wire transfer in writing prior to the record date and provide the Transfer Agent with written wire instructions and account numbers, and for the prompt payment thereof, the revenues of the Sewage Disposal System of the City (the "System"), including all appurtenances, extensions and improvements thereto, after provision has been made for reasonable and necessary expenses of operation, maintenance and administration (the "Net Revenues"), are irrevocably pledged and a statutory lien thereon is hereby recognized and created subject only to certain rights of the holders of the 517-E Bonds (as hereinafter defined) for which a portion of the proceeds of the Series 1986 Bonds (as hereinafter defined) have been deposited in escrow in an amount sufficient with interest on investments thereof to pay in full all of the principal of and interest, and redemption premium, on such portion of the 517-E Bonds as it comes due, all as provided in Ordinance No. _____ which authorized the issuance of the Series 1986 Bonds.

This bond is one of a series of bonds (the "Series 1986 Bonds") of even date and like tenor, except as to denomination, rate of interest and date of maturity, aggregating the principal sum of \$ _____ issued pursuant to Ordinance No. _____ duly adopted by the City Council of the City, and under and in full compliance with the Constitution and statutes of the State of Michigan, including specifically Act 94, Public Acts of Michigan, 1933, as amended, for the purpose of paying part of the cost of refunding a portion of certain outstanding revenue bonds of the City issued under Ordinance No. 517-E, effective November 9, 1950 as amended and supplemented (all such bonds the "517-E Bonds" and such bonds being refunded herein the "Refunded Bonds") and the costs of issuing the bonds. The Series 1986 Bonds are equally and ratably payable with the 517-E Bonds from the Net Revenues so long as there is no insufficiency for any reason in the securities deposited in Trust to refund the Refunded Bonds or other 517-E Bonds hereafter refunded.

For a complete statement of the revenues from which and the conditions under which this bond is payable, a statement of the conditions under which additional bonds of equal standing may hereafter be issued and the general covenants and provisions pursuant to which this bond is issued, reference is made to Ordinance No. _____.

Bonds of this issue maturing in the years _____ to _____ inclusive, are not subject to redemption prior to maturity. Bonds or portions of bonds in multiples of \$5,000, of this issue maturing in the year _____ and thereafter may be redeemed at the option of the City, in such order of maturity as the City shall determine and within any maturity by lot,

on any interest payment date on or after July 1, _____ at par and accrued interest to the date fixed for redemption plus a premium expressed as a percentage of par as follows:

_____ % of the par value of each bond or portion thereof called for redemption on or after July 1, _____, but prior to July 1, _____;

_____ % of the par value of each bond or portion thereof called for redemption on or after July 1, _____; and

_____ % of the par value of each bond or portion thereof called for redemption on or after July 1, _____.

No premium shall be paid on bonds called for redemption on or after July 1, _____. Bonds of this issue maturing on July 1, _____ are subject to mandatory redemption pursuant to the terms of Ordinance No. _____ (as selected by lot) on July 1, _____ and on each July 1 thereafter to and including July 1, _____ at 100% of the principal amount thereof plus accrued interest to the redemption date in the principal amounts as follows:

July 1 of the Year	Principal Amount	July 1 of the Year	Principal Amount
In case less than the full amount of an outstanding bond is called for redemption, the Transfer Agent upon presentation of the bond called in part for redemption shall register, authenticate and deliver to the registered owner a new bond in the principal amount of the portion of the original bond not called for redemption.			

Notice of redemption shall be given to the registered owners of the bonds or portions of bonds to be redeemed by mailing of such notice by first class mail not less than twenty (20) days prior to the date fixed for redemption to the registered owner at the address of the registered owner as shown on the registration books of the City. Bonds or portions of bonds so called for redemption shall not bear interest after the date fixed for redemption, provided funds are on hand with the Transfer Agent to redeem the bonds or portions of bonds called for redemption.

This bond is a self-liquidating bond and is not a general obligation of the City and does not constitute an indebtedness of the City within any constitutional, statutory or charter limitation, but is payable, both as to principal and interest, solely from the Net Revenues of the System. The principal of and interest on this bond are secured by the statutory lien hereinbefore mentioned.

The City has covenanted and agreed, and does hereby covenant and agree to fix and maintain at all times while any bonds payable from the Net Revenues of the System shall be outstanding, such rates for service furnished by the System as shall be sufficient to provide for payment of the interest upon and the principal of the bonds of this issue and any other bonds payable from the Net Revenues as and when the same shall become due and payable, and to maintain a bond redemption fund therefor, to provide for the payment of expenses of administration and operation and such expenses for maintenance of the System as are necessary to preserve the same in good repair and working order, and to provide for such other expenditures and funds for the System as are required by Ordinance No. 517-E, as amended and supplemented and Ordinance No. _____.

This bond is transferable only upon the books of the City kept for that purpose at the office of the Transfer Agent by the registered owner hereof in person, or by his attorney duly authorized in writing, upon the surrender of this bond together with a written instrument of transfer satisfactory to the Transfer Agent duly executed by the registered owner or his attorney duly authorized in writing, and thereupon a new registered bond or bonds in the same aggregate principal amount and of the same maturity shall be issued to the transferee in exchange therefor as provided in Ordinance No. _____ and upon the payment of the charges, if any, therein prescribed.

It is hereby certified and recited that all acts, conditions and things required by law precedent to and in the issuance of this bond and the series of bonds of which this is one have been done and performed in regular and due time and form as required by law.

This bond is not valid or obligatory for any purpose until the Transfer Agent's Certificate of Authentication on this bond has been executed by the Transfer Agent.

IN WITNESS WHEREOF, the City Council of the City of Detroit, County of Wayne, State of Michigan, has caused this bond to be executed with the facsimile signatures of its Mayor and its Finance Director and a facsimile of its corporate seal to be printed on this bond, all as of the Date of Original Issue.

CITY OF DETROIT

By _____ (Facimile)
Mayor

(Seal) [Facsimile]
Countersigned:

(Facimile)
Finance Director

[FORM OF TRANSFER AGENT'S CERTIFICATE
OF AUTHENTICATION]

Certificate of Authentication

This bond is one of the bonds described in the withinmentioned Ordinance.

By Transfer Agent _____

Authorized Representative _____

Date of Authentication:

Section 21. Covenants. The City covenants and represents with the registered owners of the Bonds that so long as any of the 517-E Bonds or Bonds remain outstanding and unpaid as to either principal or interest.

(a) The City is the lawful owner of the System, the System is free from any and all liens and encumbrances, and the City has good right and lawful authority to encumber and pledge the revenues of the System as such revenues are herein encumbered and pledged.

(b) The City will, through its Commissioners, or such successor board or body as may hereafter be legally charged with the duty of the operation of the System, maintain the System in good repair and working order and will operate it efficiently and will faithfully and punctually perform all duties with reference to the System required by the constitution and laws of the State of Michigan, including the making and collecting of sufficient rates for services rendered by the System and the segregation and application of the revenues of the System in the manner provided in this Ordinance. The City will from time to time make all needful and proper repairs, replacements, additions and betterments to the System so that the System may at all times be operated properly and advantageously, and whenever any portion of the System shall have been worn out, destroyed or become obsolete, inefficient or otherwise unfit for use, the City will procure and install substitutes of at least equal utility and efficiency so that the value and efficiency of the System shall at all times be fully maintained.

(c) The City will maintain and keep proper books of record and account separate from all other records and accounts in which shall be made full and correct entries of all transactions relating to the System. Not later than four (4) months after the close of each Fiscal Year, the City will cause to be prepared a statement in reasonable detail, sworn to by its chief accounting officer, showing the cash income and disbursements of the System during such Fiscal Year, the assets and liabilities of the System at the beginning and close of the Fiscal Year, and such other information as is necessary to enable the residents of the City and the holders of the Bonds to be fully informed as to all matters pertaining to the financial operation of the System during such year. A certified copy of such statement shall be filed with the Michigan Department of Treasury and shall be mailed to each holder of the Bonds who has requested such financial statements. Said statement shall at all times be open to inspection by the holder or holders of any of the Bonds. The City will also cause an annual audit of such books of record and account for the preceding Fiscal Year to be made by an independent certified public accountant who shall comment on the manner in which the City has complied with the requirements of this Ordinance. The City will make such audit available to the holders of any of the Bonds upon request.

(d) The City will not sell, lease or dispose of the System or any substantial part thereof until all of the Bonds have been paid in full as to both principal and interest. This covenant shall not be construed to prohibit the disposition or lease of any property comprising part of the System which is no longer necessary, appropriate, required for the use of, or profitable to the System, or which is no longer necessary to the proper operation and maintenance thereof, or which may be sold and leased back to the extent such arrangement is permitted by law: Provided, however, that the provision of this sentence shall not be construed to authorize or permit the sale, lease or disposition of any substantial part of the System. The City is to be permitted at all times in its discretion to alter, repair or replace any buildings or structures or any part of the System and appurtenances thereto as the Commissioners determine necessary for the System.

(e) The City will acquire and construct the Project promptly and in accordance with the plans therefor.

(f) The City will not and will not, to the extent permitted by law, permit others to, operate a sewage disposal system that will compete with the System.

(g) The City will not issue any Bonds or incur any indebtedness with a claim on Net Revenues prior to the lien of the 517-E Bonds and the Bonds.

(h) The City will promptly comply with all of its obligations, covenants and duties required by this Ordinance, Ordinance No. 517-E and law.

(i) The City will take all action and refrain from any action as is necessary, including paying any rebates to the United States government that may be required by the Code, which are hereby authorized to be paid from the Operation and Maintenance Fund as an expense of the System, so as not to impair the tax exemption of the interest

on the 517-E Bonds and the Bonds from general federal and State of Michigan income taxation. This covenant shall prevent the City from issuing bonds or incurring indebtedness which is subject to federal or State of Michigan income taxation.

Section 22. Additional Bonds. Except as hereinafter provided, the City shall not issue Additional Bonds of equal standing with respect to the Net Revenues with the Series 1986 Bonds but may issue Junior Lien Bonds. Prior to the Transfer Date, Additional Bonds shall only be issued in compliance with both Section 19 of Ordinance No. 517-E and this Section 22 and thereafter only in accordance with this Section 22.

The right is reserved in accordance with the provisions of Act 94, to issue Additional Bonds payable from the Revenues of the System which shall be of equal standing and priority of lien on the Net Revenues of the System with the Series 1986 Bonds but only for the purposes and under the terms and conditions provided in subsection (a), (b), (c) or (d) below:

(a) For repairs, extensions, enlargements and improvements to the System, refunding all or a part of the 517-E Bonds or any outstanding Bonds or any other debt incurred by the City for any purpose for which Bonds may be issued hereunder and paying costs of issuing such Additional Bonds including deposits, if any, to be made to the Bond Reserve Account and to pay interest on such Additional Bonds. Bonds for such purposes shall not be issued pursuant to this subparagraph (a) unless the actual or augmented (as hereinafter detailed in this paragraph) Net Revenues of the System (not including investment earnings on the various funds and accounts established hereunder but including investment earnings on the Bond Reserve Account) for the then last preceding audited Fiscal Year shall be equal to at least one hundred thirty-five percent (135%) of the Maximum Annual Debt Service on the 517-E Bonds, any outstanding Bonds and Additional Bonds then being issued. If the Additional Bonds are to be issued in whole or in part for refunding of 517-E Bonds or outstanding Bonds the annual principal and interest requirements shall be determined by deducting from the principal and interest requirements for each Fiscal Year the annual principal and interest requirements of any 517-E Bonds or Bonds to be Refunded from the proceeds of the Additional Bonds. For purposes of this subparagraph (a) the City may elect to use as the last preceding Fiscal Year any Fiscal Year ending not more than sixteen months prior to the date of delivery of the Additional Bonds for which an audit is available. If any change in the rates, fees or charges of the System shall be authorized at or prior to the time of the resolution authorizing the sale of any Additional Bonds, the Net Revenues for the preceding Fiscal Year shall be augmented by an amount reflecting the effect of such change had the System's billings during such Fiscal Year been at the adopted rates. In addition, the actual Net Revenues for the preceding audited Fiscal Year may be augmented by seventy percent (70%) of the estimated increase in Net Revenues to accrue as a result of the acquisition of the repairs, extensions, enlargements and improvements to the system to be paid for in whole or in part from the proceeds of the Additional Bonds and one hundred percent (100%) of any extension or connection which was made subsequent to the end of the last audited Fiscal Year. Determination by the Council as to existence of conditions permitting the issuance of Additional Bonds shall be conclusive; provided, however, that with respect to augmentation of Net Revenues, the City shall engage the services of and receive the certificate of a consulting engineer of national reputation for advising municipalities with respect to setting rates and charges for the use of sewage disposal systems regarding the existence of such conditions, or, if no augmentation is required, Council may rely only on audited financial statements. No Additional Bonds of equal standing as to the Net Revenues of the System shall be issued pursuant to the authorization contained in this subparagraph if the City shall then be in default in making its required payments to any funds or accounts created hereunder.

(b) To Refund all or a part of the Pre-1980 Bonds or any Bonds outstanding hereunder and paying costs of issuing such Additional Bonds including deposits which may be made to the Bond Reserve Account. No Additional Bonds shall be issued pursuant to this subsection unless the total amount of principal and interest falling due in the then current Fiscal Year and each Fiscal Year thereafter until maturity of all Pre-1980 Bonds and Bonds which have not been Refunded after giving effect to such refunding shall be not greater than the total amount of principal and interest maturing in the then current Fiscal Year and each Fiscal Year thereafter until maturity prior to giving effect to such refunding. For purposes of this paragraph, principal of and interest on 517-E Bonds or Bonds which mature on the first day of a Fiscal Year shall be deemed to mature on the last day of the immediately preceding Fiscal Year.

(c) To provide for the accession of Junior Lien Bonds to the status of complete parity with the Bonds as provided in Section 23 below.

(d) To provide for the conversion of Variable Rate Bonds (which have been previously issued in accordance with subsection (a), (b) or (c) hereof) to bear interest at fixed rate, in accordance with their terms.

Section 23. Accession of Junior Lien Bonds to Parity Status. The City may provide for the accession of Junior Lien Bonds to the status of complete parity with the Bonds when there shall have been filed with the Commissioners a certificate of either a

national consulting firm meeting the requirements of Section 22(a) or a national firm of certified public accountants, reciting:

(i) that the Bond Reserve Account contains an amount equal to the Bond Reserve Requirement computed on a basis which includes all 517-E Bonds not Refunded, all Bonds then outstanding and said Junior Lien Bonds;

(ii) that all payments into the various funds and accounts hereinabove required to be held are current as of the date of accession;

(iii) that the Redemption Fund contains the amounts which would have been required to be accumulated therein on the date of accession if said Junior Lien Bonds had originally been issued as Bonds; such amounts shall be shown in said certificate; and

(iv) that the requirements of Section 22(a) for issuing Additional Bonds are met after such accession.

The accession of Junior Lien Bonds shall be conclusively evidenced by notice from the City to the Trustee, each holder of a 517-E Bond or Bond which has not been Refunded and each holder of a Junior Lien Bond.

Section 24. Department of Treasury Approval; Sale of Series 1986 Bonds. The Finance Director shall make application to the State Treasurer for authority to issue and sell the Series 1986 Bonds or for an exception from prior approval for the sale of the Series 1986 Bonds. The Finance Director is hereby authorized to negotiate and subject to the approval of the Council execute a bond purchase agreement with a purchaser or purchasers approved by the Council finalizing the details of the Series 1986 Bonds within the authorized parameters of this Ordinance. The Finance Director may negotiate, approve and execute the Escrow Agreement with the Escrow Agent and approve the circulation of a preliminary and, after approval by the Council, a final official statement describing the Series 1986 Bonds, and do all other acts and take all other necessary procedures required to effectuate the sale, issuance and delivery of the Series 1986 Bonds.

Section 25. Finance Director Determinations, Reduction Amount, Serial and Term Bonds. The Finance Director of the City shall determine, on the basis of her evaluation of the maximum amount of Series 1986 Bonds which can be sold, given anticipated interest rates and the revenue coverage requirements with respect to the Series 1986 Bonds or for any other reasons whether to offer the full authorized amount of the Series 1986 Bonds. The Finance Director shall also determine and establish, in accordance with this Ordinance, the annual maturities of the Series 1986 Bonds (whether as Serial Bonds or Term Bonds, or a combination of both) and the Mandatory Redemption Requirement, if any, and the redemption provisions with respect to the Series 1986 Bonds.

During the Finance Director's absence or disability, or while the Finance Director's position is vacant, the Deputy Finance Director shall exercise all the powers, perform all the duties and make all the determinations herein required or permitted with respect to the Series 1986 Bonds.

All the foregoing determinations and actions of the Finance Director shall be ratified and confirmed by resolution of the City Council authorizing the sale of the Series 1986 Bonds.

Section 26. Amendments; Consent of Bondholders.

(A) The City, from time to time and at any time, subject to the conditions and restrictions in this Ordinance contained, may enact one or more supplemental or amendatory ordinances or resolutions or both which thereafter shall form a part hereof, for any one or more or all of the following purposes:

(i) To issue Additional Bonds or Junior Lien Bonds;

(ii) To add to the covenants and agreements of the City in this Ordinance contained, other covenants and agreements thereafter to be observed or to surrender, restrict or limit any right or power herein reserved to or conferred upon the City (including but not limited to the right to issue Additional Bonds) and which shall not have a material adverse effect on the interests of the owners of the Bonds;

(iii) To make such provisions for the purpose of curing any ambiguity, or of curing, correcting or supplementing any defective provisions contained in this Ordinance, or in regard to matters or questions arising under this Ordinance, as the City may deem necessary or desirable and not inconsistent with this Ordinance and which shall not have material, adverse effect on the interests of the owners of the Bonds;

(iv) To increase the size or scope of the System;

(v) To make such modifications in the provisions hereof as may be deemed necessary by the City to accommodate the issuance of Additional Bonds or Junior Lien Bonds which (a) are "Capital Appreciation Bonds" or "Zero Coupon Bonds" to the extent permitted by law or (b) are Variable Rate Bonds or (c) which are payable as to principal on dates other than July 1 or as to interest on dates other than January 1 and July 1, but only if such modifications, in the written opinion of nationally recognized bond counsel filed with the Council, do not result in materially diminishing the security hereby granted to the owners of any Bonds at the time outstanding; and

(vi) As provided in Sections 6 and 8 hereof.

Any amendment or supplemental ordinance or resolution authorized by the provisions of this Section 26(A) may be enacted by the City without the consent of or notice to the owners of any of the Bonds at the time outstanding, notwithstanding any of the provisions of Section 26(B) below.

(B) With the consent of the owners of not less than 51% in principal amount of the Bonds then outstanding, the City may from time to time and at any time adopt an ordinance or ordinances supplemental hereto for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this ordinance or of any supplemental ordinance; provided, however, that no such supplemental ordinance shall (a) extend the fixed maturity of any Bond, change a Mandatory Redemption Requirement or reduce the rate of interest thereon or extend the time of payment of interest, or reduce the amount of the principal thereof, or reduce or extend the time for payment of any premium payable on the redemption thereof, without the consent of the owner of each Bond so affected, or (b) reduce the aforesaid percentage of owners of the Bonds required to approve any such supplemental ordinance, or (c) deprive the owners of the Bonds (except as aforesaid) of the right to payment of the Bonds from the Net Revenues, without the consent of the owners of all the Bonds then outstanding. No amendment may be made under this Section 26(B) which affects the rights or duties of the insurer of any of the Bonds without its consent.

It shall not be necessary for the consent of the Bondholders under this Section 26(B) to approve the particular form of any proposed supplemental ordinance, but it shall be sufficient if such consent shall approve the substance thereof.

Promptly after the enactment by the City of any supplemental ordinance pursuant to the provisions of this Section 26(B), the City shall cause the Transfer Agent to mail a notice by registered or certified mail to the registered owners of all Bonds outstanding at their addresses shown on the bond register or at such other address as is furnished in writing by such registered owner to the Transfer Agent setting forth in general terms the substance of such supplemental ordinance.

Section 27. Repeal, Savings Clause. Ordinance No. 517-E shall be repealed effective the Transfer Date; provided, however, that the lien created by Ordinance No. 517-E on Net Revenues shall remain prior to the lien created hereby for the benefit of the 517-E Bonds as described in Ordinance No. 517-E until all 517-E Bonds are retired. All other ordinances, resolutions or orders, or parts thereof, in conflict with the provisions of this Ordinance are, to the extent of such conflict, repealed.

Section 28. Severability; Paragraph Headings; and Conflict. If any section, paragraph, clause or provision of this Ordinance shall be held invalid, the invalidity of such section, paragraph, clause or provision shall not affect any of the other provisions of this Ordinance. The paragraph headings in this Ordinance are furnished for convenience of reference only and shall not be considered to be part of this Ordinance.

Section 29. Transfer Agent. The Finance Director is hereby authorized to select a bank or trust company to act as registrar and transfer agent for the Series 1986 Bonds and to insert the name of such transfer agent in the appropriate places in the Bond Form.

Section 30. Publication and Recordation. This Ordinance shall be published in full in the Detroit Legal News, a newspaper of general circulation in the City qualified under State law to publish legal notices, promptly after its adoption and shall be recorded in the official proceedings of the Council and such recording shall be authenticated by the signature of the President of the Council and the City Clerk.

Section 31. Effective Date. This Ordinance shall be effective immediately.

(JCCP. 2356-2377)

Passed:

Approved:

Published:

Effective:

December 9, 1986)

December 9, 1986

December 12, 1986

December 17, 1986

December 17, 1986

JAMES H. BRADLEY
City Clerk

EXHIBIT 6

DTC Bond

NEW ISSUE (Book Entry-Only)**RATINGS:** (See "RATINGS" herein)

In the opinion of Bond Counsel, Lewis & Munday, A Professional Corporation, and Miller, Canfield, Paddock and Stone, P.L.C., under existing law as presently interpreted (i) interest on the 2005 Bonds is excluded from gross income for federal income tax purposes, (ii) interest on the 2005 Bonds is not an item of tax preference for purposes of the alternative minimum tax on individuals and corporations, and (iii) the 2005 Bonds and the interest thereon are exempt from all taxation imposed by the laws of the State of Michigan except inheritance and estate taxes and taxes on gains realized from the sale, payment or other disposition thereof, in each case to the extent and subject to the conditions described under "TAX MATTERS" and in Appendix F.

\$376,730,000
City of Detroit, Michigan
Sewage Disposal System

\$273,355,000
Revenue Second Lien Bonds,
Series 2005(A)

\$40,215,000
Revenue Refunding
Second Lien Bonds,
Series 2005(B)

\$63,160,000
Revenue Refunding
Second Lien Bonds,
Series 2005(C)

Dated: Date of Delivery**Due:** July 1, as shown on inside cover

The Sewage Disposal System Revenue Second Lien Bonds, Series 2005(A) (the "2005A Bonds"), Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2005(B) (the "2005B Bonds") and Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2005(C) (the "2005C Bonds", and together with the 2005A Bonds and 2005B Bonds, the "2005 Bonds") are issuable only in book-entry form and when issued will be registered in the name of Cede & Co., as nominee for The Depository Trust Company, New York, New York ("DTC"). DTC will act as securities depository for the 2005 Bonds. Purchasers will not receive certificates representing their interests in the 2005 Bonds. Individual purchases of beneficial ownership interests in the 2005 Bonds will be made in book-entry form in denominations of \$5,000 or integral multiples thereof. So long as Cede & Co. is the registered owner of the 2005 Bonds, principal of and interest on the 2005 Bonds will be paid directly to Cede & Co., as nominee for DTC, by U.S. Bank National Association, Detroit, Michigan, as Transfer Agent. See "THE 2005 BONDS - Book-Entry-Only System."

The 2005 Bonds will bear interest from their respective dates of delivery at the rates, and will mature on July 1 in the years and the principal amounts set forth on the inside cover of this Official Statement. Interest on the 2005 Bonds is payable each January 1 and July 1, commencing July 1, 2005.

The 2005B Bonds are not subject to redemption prior to maturity. The 2005A and 2005C Bonds are subject to optional and mandatory redemption prior to maturity as more fully described under "THE 2005 BONDS - Redemption Provisions."

The proceeds of the 2005 Bonds will be used to finance a portion of the costs of certain repairs, extensions and improvements to the City's Sewage Disposal System as part of the long-term capital improvement program of the City's Water and Sewerage Department, refund certain of the City's outstanding Sewage Disposal System Revenue Senior Lien Bonds, purchase a debt service reserve surety to satisfy the reserve requirement attributable to the 2005 Bonds, fund capitalized interest and pay costs of issuance associated with the 2005 Bonds. See "PLAN OF FINANCING."

The 2005 Bonds are not general obligations of the City and do not constitute indebtedness of the City for purposes of computing its debt limitations imposed by constitutional, statutory or charter provisions. The 2005 Bonds do not constitute a charge against the general credit or taxing power of the City, and the City is not liable for the payment of the 2005 Bonds except from the sources herein described. The 2005 Bonds are secured by a second lien on the Net Revenues of the City's Sewage Disposal System, as provided in the Ordinance, subordinate to Senior Lien Bonds heretofore and hereafter issued on a first lien basis and related Ancillary Obligations. See "SECURITY AND SOURCES OF PAYMENT FOR THE 2005 BONDS." Payment of the principal of and interest on the 2005 Bonds of each series when due will be insured by a separate financial guaranty insurance policy to be issued by MBIA Insurance Corporation simultaneously with the delivery of such series of 2005 Bonds. See "BOND INSURANCE."

MBIA

THIS COVER PAGE CONTAINS INFORMATION FOR QUICK REFERENCE ONLY. IT IS NOT A SUMMARY OF THIS ISSUE. INVESTORS MUST READ THE ENTIRE OFFICIAL STATEMENT TO OBTAIN INFORMATION ESSENTIAL TO THE MAKING OF AN INFORMED INVESTMENT DECISION.

The 2005 Bonds are offered when, as and if issued and received by the Underwriters, subject to approval of legality by Bond Counsel, Lewis & Munday, A Professional Corporation, Detroit, Michigan and Miller, Canfield, Paddock and Stone, P.L.C., Detroit, Michigan, and satisfaction of certain other conditions. Certain legal matters will be passed upon for the Underwriters by Pepper Hamilton LLP, Detroit, Michigan. The 2005A Bonds and 2005B Bonds are expected to be available for delivery through the facilities of DTC on or about March 17, 2005. The 2005C Bonds are expected to be available for delivery through the facilities of DTC on or about April 5, 2005.

Citigroup

Loop Capital Markets, LLC
Comerica Securities
Morgan Stanley

JPMorgan
M.R. Beal & Company
Siebert Bradford Shank & Co., LLC

Merrill Lynch & Co.
Melvin Securities L.L.C.
Oppenheimer & Co. Inc.

March 9, 2005

\$273,355,000
City of Detroit, Michigan
Sewage Disposal System Revenue Second Lien Bonds, Series 2005(A)
\$10,355,000 Serial Bonds

<u>Maturity (July 1)</u>	<u>Amount</u>	<u>Rate</u>	<u>Yield</u>	<u>Maturity (July 1)</u>	<u>Amount</u>	<u>Rate</u>	<u>Price/ Yield</u>
2008	\$ 20,000	2.75%	2.85%	2017	\$ 545,000	4.00%	100.00
2009	250,000	2.90	2.95	2018	555,000	4.00	4.06%
2010	420,000	3.00	3.10	2019	830,000	4.00	4.15
2011	580,000	3.25	3.35	2020	860,000	4.00	4.20
2012	675,000	3.40	3.50	2021	905,000	4.10	4.26
2013	705,000	3.50	3.65	2022	925,000	4.125	4.32
2014	625,000	3.60	3.77	2023	970,000	4.25	4.38
2015	490,000	3.70	3.86	2024	490,000	4.25	4.42
2016	510,000	3.75	3.94				

\$35,890,000 5% Term Bonds due July 1, 2030 Yield 4.49%*
\$41,165,000 5.125% Term Bonds due July 1, 2033 Yield 4.48%*
\$138,945,000 5% Term Bonds due July 1, 2035 Yield 4.53%*
\$47,000,000 4.5% Term Bonds due July 1, 2035 Yield 4.72%

\$40,215,000
City of Detroit, Michigan
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2005(B)
\$40,215,000 Serial Bonds

<u>Maturity (July 1)</u>	<u>Amount</u>	<u>Rate</u>	<u>Yield</u>	<u>Maturity (July 1)</u>	<u>Amount</u>	<u>Rate</u>	<u>Yield</u>
2012	\$ 500,000	3.40%	3.50%	2015	\$8,010,000	5.00%	3.86%
2012	2,520,000	5.00	3.50	2021	10,420,000	5.50	4.18
2014	7,775,000	5.00	3.77	2022	10,990,000	5.50	4.23

\$63,160,000
City of Detroit, Michigan
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2005(C)
\$63,160,000 Serial Bonds

<u>Maturity (July 1)</u>	<u>Amount</u>	<u>Rate</u>	<u>Yield</u>	<u>Maturity (July 1)</u>	<u>Amount</u>	<u>Rate</u>	<u>Yield</u>
2006	\$ 195,000	2.40%	2.45%	2016	\$4,570,000	5.00%	3.94%*
2007	100,000	2.625	2.69	2017	4,795,000	5.00	4.01 *
2008	2,265,000	5.00	2.85	2018	5,030,000	5.00	4.06 *
2011	3,320,000	5.00	3.35	2019	5,280,000	5.00	4.11 *
2012	3,760,000	5.00	3.50	2020	7,355,000	5.00	4.15 *
2013	3,940,000	5.00	3.65	2021	7,720,000	5.00	4.20 *
2014	4,140,000	5.00	3.77	2025	6,345,000	5.00	4.39 *
2015	4,345,000	5.00	3.86				

* Yield to first call date.



CITY OF DETROIT

MAYOR
KWAME M. KILPATRICK

CITY COUNCIL
MARYANN MAHAFFEY, President

KENNETH V. COCKREL, JR, President, *Pro Tem*
ALONZO W. BATES
SHEILA M. COCKREL
BARBARA-ROSE COLLINS
SHARON McPHAIL
ALBERTA TINSLEY-TALABI
JOANN WATSON

CITY CLERK
JACKIE L. CURRIE

CHIEF FINANCIAL OFFICER/FINANCE DIRECTOR
SEAN K. WERDLOW

WATER AND SEWERAGE DEPARTMENT DIRECTOR
VICTOR M. MERCADO

BOARD OF WATER COMMISSIONERS
MARY E. BLACKMON, President

HILLIARD HAMPTON
JOHN E. JOHNSON
CARLA WALKER-MILLER

MARILYNN E. GOSLING
GREGORY TERRELL
WILLIAM G. WESTRICK

SPECIAL SERVICES

LEWIS & MUNDAY, A PROFESSIONAL CORPORATION, and
MILLER, CANFIELD, PADDOCK AND STONE, P.L.C., Bond Counsel

ROBERT W. BAIRD & CO., Financial Advisors

THE FOSTER GROUP, LLC, Feasibility Consultants

KPMG LLP, Independent Auditors

This Official Statement has been prepared by the City and provides certain information relating to the City and its Sewage Disposal System in connection with the sale of the 2005 Bonds. This Official Statement is distributed in connection with the sale of the 2005 Bonds and may not be reproduced or used, in whole or in part, for any other purpose. No dealer, broker, salesman or other person has been authorized by the City or the Underwriters to give any information or to make any representations with respect to the City or its 2005 Bonds other than those contained in this Official Statement and, if given or made, such other information or representations must not be relied upon as having been authorized by the City or the Underwriters. Neither the City nor the Underwriters have undertaken any independent investigation of the operations of the Bond Insurer and they make no representation herein as to the accuracy or adequacy of such information or as to the ability of the Bond Insurer to make payments under the bond insurance policy. The Underwriters have provided the following sentence for inclusion in this Official Statement: The Underwriters have reviewed the information in this Official Statement in accordance with, and as part of, their respective responsibilities to investors under the federal securities laws as applied to the facts and circumstances of this transaction, but the Underwriters do not guarantee the accuracy or completeness of such information.

This Official Statement does not constitute an offer to sell or a solicitation of an offer to buy, nor shall there be any sale of the 2005 Bonds by any person in any jurisdiction in which it is unlawful for such person to make such offer, solicitation or sale. The information and expressions of opinion herein are subject to change without notice, and neither the delivery of this Official Statement nor any sale made hereunder shall, under any circumstances, create any implication that there has been no change in the affairs of the Sewage Disposal System or the City since the date hereof.

Upon issuance, the 2005 Bonds will not be registered under the Securities Act of 1933, as amended, and will not be listed on any stock or other securities exchange, and neither the Securities and Exchange Commission nor any other federal, state, municipal or other governmental entity other than the City will have passed upon the accuracy or adequacy of this Official Statement.

IN CONNECTION WITH THIS OFFERING, THE UNDERWRITERS MAY OVER-ALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE 2005 BONDS AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

The order and placement of materials in this Official Statement, including the Appendices, are not to be deemed to be a determination of relevance, materiality or importance and this Official Statement, including the Appendices, must be considered in its entirety.

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OFFICIAL STATEMENT

\$376,730,000
CITY OF DETROIT, MICHIGAN
Sewage Disposal System

\$273,355,000
Revenue Second Lien Bonds,
Series 2005(A)

\$40,215,000
Revenue Refunding Second Lien Bonds,
Series 2005(B)

\$63,160,000
Revenue Refunding Second Lien Bonds,
Series 2005(C)

INTRODUCTION

This Official Statement provides certain information in connection with the issuance by the City of Detroit (the "City"), in the State of Michigan (the "State"), of its Sewage Disposal System Revenue Second Lien Bonds, Series 2005(A) (the "2005A Bonds"), Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2005(B) (the "2005B Bonds") and Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2005(C) (the "2005C Bonds", and together with the 2005A Bonds and 2005B Bonds, the "2005 Bonds"). For definitions of certain capitalized terms used but not otherwise defined in this Official Statement, see Appendix D – "The Ordinance."

Authorization

The 2005 Bonds are authorized under the Revenue Bond Act of 1933, Act No. 94, Public Acts of Michigan, 1933, as amended (the "Act"), and issued pursuant to Ordinance No. 18-01 adopted by the City Council on October 18, 2001 (the "Ordinance"), as supplemented by a resolution adopted by the City Council on November 17, 2004 (the "Resolution") and Sale Orders of the Finance Director of the City dated as of March 9, 2005 executed in connection with the sale of the 2005 Bonds to the Underwriters (collectively, the "Sale Order"). The Ordinance, the Resolution and the Sale Order are collectively referred to as the "Bond Ordinance."

Senior Lien Bonds, Junior Lien Bonds, Second Lien Bonds

The Ordinance authorizes the issuance of Sewage Disposal System Revenue Bonds and Revenue Refunding Bonds (the "Sewage System Bonds" or the "Bonds") to finance and refinance capital improvements to the City's Sewage Disposal System. All Sewage System Bonds issued and to be issued under the Ordinance are payable solely from the Pledged Assets, which include the Net Revenues of the Sewage Disposal System and amounts available in certain funds and accounts established under the Ordinance. Sewage System Bonds secured by a senior lien on Pledged Assets constitute and are sometimes referred to in this Official Statement as "Senior Lien Bonds." All other Sewage System Bonds secured on a basis subordinate to the Senior Lien Bonds constitute and are sometimes referred to in this Official Statement as "Junior Lien Bonds." Second Lien Bonds (including the 2005 Bonds) are a type of Junior Lien Bonds secured by a second lien on the Pledged Assets, subordinate to the lien of all Senior Lien Bonds but superior to the lien of any other type of Junior Lien Bonds. To date, the only other type of Junior Lien Bonds issued and outstanding under the Ordinance are State Revolving Fund Junior Lien Bonds (the "SRF Junior Lien Bonds"). See "DEBT SERVICE AND OUTSTANDING INDEBTEDNESS" and "SECURITY AND SOURCES OF PAYMENT FOR THE 2005 BONDS."

Sewage Disposal System

The Sewage Disposal System (sometimes referred to herein as the "System") is owned by the City and is operated, managed and accounted for by the City as a separate enterprise fund through the Water and Sewerage Department (the "Department"), which is established under the Charter of the City. All funds and accounts of the System are maintained separate from other City funds. See "FINANCIAL PROCEDURES - Cash Management." The Department is headed by a seven-member board appointed by the Mayor, known as the

Board of Water Commissioners (the "Board"), which meets monthly. The Department and the Board oversee both the Sewage Disposal System and the Water Supply System.

The Sewage Disposal System, including a plant providing primary and secondary wastewater treatment (see "THE SEWAGE DISPOSAL SYSTEM – The Plant") as well as a sewage collection and interceptor network, is one of the largest in the nation in terms of wastewater treated and population served. The Department is responsible for collection and treatment of wastewater for most of southeast Michigan and for approximately one-third of the State's population. Of the estimated population of 3.0 million served by the System, approximately 69% are suburban wholesale customers with the remaining 31% served on a retail basis. As a matter of policy, the City generally does not contract with individual or corporate consumers outside the City, but only with municipal entities and public sewage disposal districts or authorities. Because of its long standing relationship with most of the wholesale customers as well as the lack of economically feasible alternatives, the Department expects that, with minor exceptions, such customers will continue to be served by the System for the foreseeable future. See Appendix B – "Feasibility Report." On the basis of historical trends, the Department also anticipates that the number of people served by the System on a wholesale basis will grow as a percentage of the total population served. See "THE SEWAGE DISPOSAL SYSTEM - Service Area" and Appendix A – "Characteristics of the Sewage Disposal System Service Area."

The System is operated pursuant to the provisions of a National Pollutant Discharge Elimination System ("NPDES") permit. Such permit, issued by the Michigan Department of Environmental Quality ("MDEQ"), sets certain discharge and reporting requirements. The Department's current NPDES permit was issued on September 26, 2003 and became effective on January 1, 2004.

The System has experienced favorable financial operations for the past five years. The volume of wastewater treated during that period has been generally stable. While the demand for service is expected to grow slightly in the future, it is anticipated that additional revenues required for normal increases in operating expenses and debt service for Bonds issued to finance the System's ongoing Capital Improvement Program will be provided primarily through rate adjustments. The Department anticipates that any necessary future rate adjustments can be implemented.

Purpose of the 2005 Bonds

The 2005 Bonds are being issued to provide funds to finance a portion of the costs of construction of certain repairs, extensions and improvements to the Sewage Disposal System as part of the Department's long-term Capital Improvement Program, refund certain outstanding Senior Lien Bonds described herein, purchase a debt service reserve surety to satisfy the reserve requirement attributable to the 2005 Bonds, finance capitalized interest and pay costs of issuance of the 2005 Bonds. See "PLAN OF FINANCING."

Miscellaneous

There follow in this Official Statement descriptions of the 2005 Bonds, the Ordinance, the municipal bond insurance policy and the provider of such policy, the System and its service area, the Capital Improvement Program, the Department and its financial procedures and operations, the City's continuing disclosure undertaking, and other matters generally relating to the issuance of the 2005 Bonds, including Appendices relating to demographic, financial and legal matters, bond insurance and continuing disclosure. *Persons considering a purchase of the 2005 Bonds should read this Official Statement in its entirety.* All capitalized terms used in this Official Statement, unless otherwise defined or the context otherwise indicates, have the same meanings as in the Ordinance.

THE 2005 BONDS

General

The 2005 Bonds are issuable as fully registered bonds in authorized denominations of \$5,000 or integral multiples thereof, and will be issued in book-entry form. The 2005 Bonds will be dated their respective dates of issuance and delivery, and will mature on July 1 in the years and principal amounts and bear interest at the rates set forth on the inside cover of this Official Statement. Interest on the 2005 Bonds is payable on July 1, 2005 and semiannually on each January 1 and July 1 thereafter (each an "Interest Payment Date") by check or draft mailed by the Transfer Agent (defined below) or, upon the request of an owner of \$1,000,000 or more in principal amount of 2005 Bonds, by wire transfer. So long as the 2005 Bonds are held in book-entry form by The Depository Trust Company ("DTC"), interest on the 2005 Bonds will be paid to DTC or its nominee as described under "Book-Entry-Only System" below.

U.S. Bank National Association, Detroit, Michigan is the Transfer Agent for the 2005 Bonds. The City is required to give notice of any change in the Transfer Agent to the holders of the 2005 Bonds by mail not less than 60 days prior to any Interest Payment Date. The Transfer Agent will also serve as the escrow trustee for the Refunded Bonds (defined below).

Redemption Provisions

The 2005B Bonds are not subject to redemption prior to their stated maturity dates. The 2005A Bonds and 2005C Bonds are subject to optional and mandatory redemption as described below.

Optional Redemption. The 2005A Bonds and 2005C Bonds maturing prior to July 1, 2016 are not subject to redemption prior to maturity. The 2005A Bonds and 2005C Bonds maturing on and after July 1, 2016 are subject to redemption at the option of the City in whole or in part in such order of maturity as the City shall determine and within a maturity by lot, at any time on and after July 1, 2015, at a redemption price of 100% of the principal amount thereof to be redeemed, plus accrued interest to the date fixed for redemption.

Mandatory Sinking Fund Redemption – 2005A Bonds. The 2005A Bonds maturing on July 1, 2030, July 1, 2033 and July 1, 2035 (the "Term Bonds") are subject to mandatory redemption in part at a redemption price of 100% of the principal amount of such 2005A Bonds to be redeemed, plus accrued interest to the date fixed for redemption, from monies to be deposited in the Sinking Fund established under the Bond Ordinance in satisfaction of applicable Mandatory Redemption Requirements, on July 1 in the respective years and principal amounts set forth below:

Term Bonds		Term Bonds	
<u>July 1</u>	<u>due July 1, 2030</u>	<u>July 1</u>	<u>due July 1, 2033</u>
2026	\$ 4,475,000	2031	\$ 7,970,000
2027	7,290,000	2032	8,375,000
2028	7,650,000	2033 [†]	24,820,000
2029	8,040,000		
2030 [†]	8,435,000		
5.0% Term Bonds		4.5% Term Bonds	
<u>July 1</u>	<u>due July 1, 2035</u>	<u>July 1</u>	<u>due July 1, 2035</u>
2034	\$ 67,705,000	2034	\$ 23,000,000
2035 [†]	71,240,000	2035 [†]	24,000,000

[†] Maturity.

The principal amount of Term Bonds of a maturity to be redeemed on the dates set forth above shall be reduced by the principal amount of Term Bonds of the same maturity and interest rate that have been redeemed (other than by application of Mandatory Redemption Requirements) or otherwise acquired by the City and delivered to the Transfer Agent prior to giving the notice of redemption described below. The City may satisfy any Mandatory Redemption Requirement by the purchase and surrender of Term Bonds of the same maturity and interest rate in lieu of calling such Term Bonds for mandatory redemption.

Notice of Redemption and Manner of Selection. If less than all the 2005A Bonds or 2005C Bonds of any maturity are called for redemption, the Transfer Agent will select such 2005A Bonds or 2005C Bonds or portions thereof in Authorized Denominations for redemption by lot or in any other manner of selection as the Transfer Agent in its discretion shall deem appropriate and fair. The Transfer Agent will mail notice of redemption to the registered owners of 2005A Bonds or 2005C Bonds or portions thereof to be redeemed not less than 30 days prior to the date fixed for redemption. So long as DTC or its nominee is the registered owner of the 2005 Bonds, the Transfer Agent will send any notice of redemption only to DTC, as described in "Book-Entry-Only System" below.

2005A Bonds and 2005C Bonds or portions thereof duly called for redemption will cease to bear interest on and after the date fixed for redemption, whether or not presented for payment, provided that funds are on hand with the Transfer Agent to redeem such 2005 Bonds or portions thereof. A registered owner of a 2005A Bond or 2005C Bond selected for redemption in part, upon surrender of such 2005A Bond or 2005C Bond for redemption, shall receive without cost a new 2005 Bond of the same Series, maturity and interest rate, and in the principal amount of the unredeemed portion of the 2005A Bond or 2005C Bond that was surrendered.

Book-Entry-Only System

The Depository Trust Company ("DTC"), New York, NY, will act as securities depository for the 2005 Bonds. The 2005 Bonds will be issued as fully-registered securities registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered bond certificate will be issued for each maturity of the 2005 Bonds in the aggregate principal amount of such maturity, and will be deposited with DTC.

DTC, the world's largest securities depository, is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 2 million issues of U.S. and non-U.S. equity, corporate and municipal debt issues, and money market instruments from over 85 countries that DTC's participants ("Direct Participants") deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities through electronic computerized book-entry transfers and pledges between Direct Participants' accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC, in turn, is owned by a number of Direct Participants of DTC and Members of the National Securities Clearing Corporation, Government Securities Clearing Corporation, MBS Clearing Corporation, and Emerging Markets Clearing Corporation (NSCC, GSCC, MBSCC and EMCC, also subsidiaries of DTCC), as well as by the New York Stock Exchange, Inc., the American Stock Exchange LLC, and the National Association of Securities Dealers, Inc. Access to the DTC system is also available to others such as U.S. and non-U.S. securities brokers and dealers, banks, trust companies and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly ("Indirect Participants"). DTC has Standard & Poor's highest rating: AAA. The DTC Rules applicable to Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com.

Purchases of the 2005 Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the 2005 Bonds on DTC's records. The ownership interest of each actual purchaser of each 2005 Bond ("Beneficial Owner") is in turn to be recorded on the Direct and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the 2005 Bonds are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in 2005 Bonds, except in the event that use of the book-entry system for the 2005 Bonds is discontinued.

To facilitate subsequent transfers, all 2005 Bonds deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of the 2005 Bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the 2005 Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such 2005 Bonds are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time.

Redemption notices will be sent to DTC. If less than all of the 2005 Bonds of a maturity are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such maturity to be redeemed.

Neither DTC nor Cede & Co. (nor such other DTC nominee) will consent or vote with respect to the 2005 Bonds unless authorized by a Direct Participant in accordance with DTC's Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the City as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the 2005 Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Principal, premium, if any, and interest payments with respect to the 2005 Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from the City or the Transfer Agent on the payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, the Transfer Agent, or the City, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of principal, premium, if any, and interest to Cede & Co. (or such other DTC nominee as may be requested by an authorized representative of DTC) is the responsibility of the City or the Transfer Agent, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

DTC may discontinue providing its services as securities depository with respect to the 2005 Bonds at any time by giving reasonable notice to the City or the Transfer Agent. Under such circumstances, in the event that a successor securities depository is not obtained, bond certificates are required to be printed and delivered.

The City may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, bond certificates will be printed and delivered to DTC.

The foregoing information in this section concerning DTC and DTC's book-entry system has been obtained from sources that the City believes to be reliable, but neither the City nor the Underwriters take any responsibility for the accuracy thereof.

Disclaimer of Liability for Failures of DTC

The City and the Underwriters cannot and do not give any assurances that DTC, the Direct and Indirect Participants or others will distribute payments of principal, interest or premium with respect to the 2005 Bonds paid to DTC or its nominee as the owner of 2005 Bonds, or will distribute any redemption or other notices, to the Beneficial Owners, or that they will do so on a timely basis or will serve and act in the manner described in this Official Statement. The City and the Underwriters are not responsible or liable for the failure of DTC or any Participant to make any payment or give any notice to a Beneficial Owner with respect to the 2005 Bonds, or any error or delay relating thereto.

Transfer and Exchange of 2005 Bonds

So long as the 2005 Bonds are held in book-entry form and DTC or its nominee is the registered owner of the 2005 Bonds, beneficial ownership interests in the 2005 Bonds may only be transferred through a DTC Participant as described above in "Book-Entry-Only System." In the event the book-entry system is discontinued, the City will execute and the Transfer Agent will authenticate and deliver 2005 Bond certificates in such authorized denominations and registered in such names as DTC or its Participants shall instruct the City and the Transfer Agent. Thereafter, the City and the Transfer Agent may deem and treat the registered owners of the 2005 Bonds as the absolute owners thereof for all purposes described herein and in the Bond Ordinance.

If issued in such certificated form, any 2005 Bond may be transferred or exchanged for one or more 2005 Bonds of the same maturity and interest rate in a like aggregate principal amount and in authorized denominations, upon surrender of such 2005 Bond to the Transfer Agent, together with an assignment duly executed by the registered owner or such owner's attorney or legal representative in form satisfactory to the Transfer Agent. The Transfer Agent will record the transfer or exchange in the registration books and will authenticate and deliver a new 2005 Bond or Bonds of the same maturity and interest rate and in a like aggregate principal amount, appropriately registered and in appropriate authorized denominations. The registered owner requesting any such transfer or exchange may be charged a sum sufficient to cover any tax, fee or other governmental charge that may be imposed with respect thereto.

PLAN OF FINANCING

The Project

The 2005A Bonds are being issued (i) to finance the costs of acquisition, construction, equipping and installation of certain repairs, extensions and improvements to the System as described in the Department's current Capital Improvement Program (see "THE CAPITAL IMPROVEMENT PROGRAM") as it may be modified by the Department from time to time (the "Project"), (ii) to finance capitalized interest on the 2005A Bonds through April 1, 2007, (iii) to purchase a debt service reserve surety to satisfy the reserve requirement attributable to the 2005 Bonds, and (iv) to pay a portion of the costs of issuance of the 2005 Bonds.

Plan of Refunding

Advance Refunding. The 2005B Bonds are being issued to advance refund \$42,580,000 aggregate principal amount of the City's outstanding Sewage Disposal System Senior Lien Bonds of various Series (the "Advance Refunded Bonds"), and to pay a portion of the costs of issuance of the 2005 Bonds. The respective

Series, maturity dates, interest rates and principal amounts of the Advance Refunded Bonds are set forth below. The Advance Refunded Bonds will be redeemed on their respective first available call dates at the redemption prices shown below, plus accrued interest to the redemption date.

<u>Series</u>	<u>Maturity Date</u>	<u>Interest Rate</u>	<u>Principal Amount Refunded</u>	<u>First Call Date</u>	<u>Redemption Price</u>
1997A	July 1, 2022	5.00%	\$ 22,355,000	July 1, 2007	101%
1999A	July 1, 2011	5.20	115,000	January 1, 2010	101
1999A	July 1, 2012	5.25	3,425,000	January 1, 2010	101
2003A	July 1, 2014	5.00	8,215,000	July 1, 2013	100
2003A	July 1, 2015	5.00	8,470,000	July 1, 2013	100

Current Refunding. The 2005C Bonds will be issued and delivered on or about April 5, 2005, subsequent to the issuance and delivery of the 2005A Bonds and 2005B Bonds. See "Delivery of 2005C Bonds" below. The 2005C Bonds will be issued to refund \$66,185,000 aggregate principal amount of the City's outstanding Sewage Disposal System Senior Lien Bonds of various Series (the "Current Refunded Bonds" and, together with the Advance Refunded Bonds, the "Refunded Bonds"), and to pay a portion of the costs of issuance of the 2005 Bonds. The respective Series, maturity dates, interest rates and principal amounts of the Current Refunded Bonds are set forth below. The Current Refunded Bonds will be redeemed on July 1, 2005 at the redemption prices shown below, plus accrued interest to the redemption date.

<u>Series</u>	<u>Maturity Date</u>	<u>Interest Rate</u>	<u>Principal Amount Refunded</u>	<u>Call Date</u>	<u>Redemption Price</u>
1995A	July 1, 2025	5.00%	\$ 6,770,000	July 1, 2005	100%
1995B	July 1, 2008	5.25	2,400,000	July 1, 2005	101
1995B	July 1, 2015	5.25	20,410,000	July 1, 2005	101
1995B	July 1, 2021	5.25	36,605,000	July 1, 2005	101

Escrow Agreements. Pursuant to the terms of the Escrow Deposit Agreements (the "Escrow Agreements") to be entered into between the City and U. S. Bank National Association (the "Escrow Trustee"), the refundings will be effected by the City's depositing in trust with the Escrow Trustee proceeds of the 2005B Bonds in a separate irrevocable escrow fund for the Advance Refunded Bonds, and proceeds of the 2005C Bonds in a separate irrevocable escrow fund for the Current Refunded Bonds. In each case such proceeds, together with available funds transferred from the Debt Service Accounts related to the Refunded Bonds, will be used to purchase certain direct obligations of the United States of America, or obligations the principal of and interest on which are guaranteed by the United States of America, or a combination thereof (collectively, the "Government Obligations"). The Government Obligations will bear interest and will be scheduled to mature at such times and in such amounts so that, when paid in accordance with their respective terms, sufficient moneys will be available therefrom (together with any uninvested cash) to pay when due (i) interest becoming due on the Refunded Bonds on and prior to their respective redemption dates, and (ii) the principal of and redemption premium, if any, on the Refunded Bonds on their respective redemption dates. Principal of and interest on the Government Obligations will be held in trust and used solely for the payment of the principal of, redemption premium, if any, and interest on the Refunded Bonds, subject only to the payment to the City in accordance with the Escrow Agreements of any cash not required for such purposes.

Estimated Sources and Uses of Funds

The estimated sources and uses of funds in connection with the issuance of the 2005 Bonds are as follows:

<u>Sources:</u>	<u>2005A Bonds</u>	<u>2005B Bonds</u>	<u>2005C Bonds</u>	<u>Total</u>
Principal Amount of 2005 Bonds	\$273,355,000	\$40,215,000	\$63,160,000	\$376,730,000
Net Original Issue Premium	7,168,607	5,061,098	4,920,754	17,150,459
Refunded Bonds Debt Service Accounts		451,312	902,866	1,354,178
TOTAL SOURCES:	\$280,523,607	\$45,727,410	\$68,983,620	\$395,234,637
<u>Uses:</u>				
Deposit to Construction Fund	\$250,000,000	\$ 0	\$ 0	\$250,000,000
Debt Service Reserve Surety Bond Premium	311,282	45,795	71,923	429,000
Deposit to Escrow Funds	0	44,809,249	68,081,258	112,890,507
Capitalized Interest ⁽¹⁾	26,139,096	0	0	26,139,096
Costs of Issuance ⁽²⁾	4,073,229	872,366	830,439	5,776,034
TOTAL USES:	\$280,523,607	\$45,727,410	\$68,983,620	\$395,234,637

⁽¹⁾ Deposit to Second Lien Bond Interest and Redemption Fund to pay capitalized interest on 2005A Bonds to April 1, 2007.

⁽²⁾ Includes underwriters' discount, bond insurance premium, printing costs, rating agency fees, legal fees and other issuance expenses. Any 2005 Bond proceeds not needed to pay issuance expenses will be transferred to the 2005 Construction Fund.

Delivery of 2005C Bonds

The City has agreed to issue and sell and the Underwriters have agreed to purchase the 2005C Bonds, subject to certain conditions, for settlement and delivery (the "Settlement") on or about April 5, 2005. Substantially all of the conditions for the sale and purchase of the 2005C Bonds will be satisfied on the date the 2005A Bonds and 2005B Bonds are issued and delivered. At the Settlement certain additional documents, certificates and opinions will be delivered to the Underwriters, including the approving opinions of Lewis & Munday, A Professional Corporation, and Miller, Canfield, Paddock and Stone, P.L.C., Bond Counsel, in substantially the forms attached hereto as Appendix F, and an executed financial guaranty insurance policy with respect to the 2005C Bonds issued by the Bond Insurer. The City will then issue and deliver the 2005C Bonds to the Underwriters upon their payment of the purchase price for the 2005C Bonds.

DEBT SERVICE AND OUTSTANDING INDEBTEDNESS

As of January 1, 2005, there were \$2,365,301,174 aggregate principal amount of Sewage System Bonds outstanding, consisting of \$1,716,834,307 Senior Lien Bonds, \$342,080,000 Second Lien Bonds and \$306,386,867 SRF Junior Lien Bonds. The following tables set forth various information with respect to outstanding Sewage System Bonds, and the annual debt service on the 2005 Bonds and on the total outstanding Sewage System Bonds after issuance of the 2005 Bonds and defeasance of the Refunded Bonds.

Sewage Disposal System Revenue Bonds and Revenue Refunding Bonds

	Original Principal Amount		Outstanding as of Jan. 1, 2005	Amount to be Issued
Senior Lien Bonds				
Sewage Disposal System Revenue Bond, Series 1992-A	\$ 4,360,000	(1)	\$ 2,175,000	\$ 0
Sewage Disposal System Revenue Bond, Series 1992-B	1,915,000	(1)	955,000	0
Sewage Disposal System Revenue Bond, Series 1993-B	6,603,996	(1)	3,590,000	0
Sewage Disposal System Revenue Bonds, Series 1995-A	132,430,000		9,655,000	(2) 0
Sewage Disposal System Revenue Refunding Bonds, Series 1995-B	125,295,000		80,255,000	(2) 0
Sewage Disposal System Revenue Bonds, Series 1997-A	262,494,128		138,174,128	(2) 0
Sewage Disposal System Revenue Bond, Series 1997-B	6,075,000	(1)	4,005,000	0
Sewage Disposal System Revenue Refunding Bonds, Series 1998-A	69,000,000		68,000,000	0
Sewage Disposal System Revenue Refunding Bonds, Series 1998-B	68,955,000		67,900,000	0
Sewage Disposal System Revenue Bond, Series 1999-SRF1	21,475,000	(1)	17,985,000	0
Sewage Disposal System Revenue Bond, Series 1999-SRF2	46,000,000	(1)	42,365,000	0
Sewage Disposal System Revenue Bond, Series 1999-SRF3	31,030,000	(1)	26,000,000	0
Sewage Disposal System Revenue Bond, Series 1999-SRF4	40,655,000	(1)	34,065,000	0
Sewage Disposal System Revenue Bonds, Series 1999-A	302,995,178		39,135,179	(2) 0
Sewage Disposal System Revenue Bonds, Series 2001(A)	76,375,000		76,375,000	0
Sewage Disposal System Revenue Bonds, Series 2001(C-1)	159,970,000		156,500,000	0
Sewage Disposal System Revenue Bonds, Series 2001(C-2)	127,165,000		124,500,000	0
Sewage Disposal System Revenue / Revenue Refunding Bonds, Series 2003(A)	599,380,000		574,335,000	(2) 0
Sewage Disposal System Revenue Bonds, Series 2003(B)	150,000,000		150,000,000	0
Sewage Disposal System Revenue Refunding Bonds, Series 2004-A	101,435,000		100,865,000	0
Total Senior Lien Bonds	<u>\$2,333,608,302</u>		<u>\$1,716,834,307</u>	<u>\$ 0</u>
Second Lien Bonds				
Sewage Disposal System Revenue Bonds, Series 2001(B)	\$110,550,000		\$110,550,000	\$ 0
Sewage Disposal System Revenue Bonds, Series 2001(D-1)	20,000,000		20,000,000	0
Sewage Disposal System Revenue Bonds, Series 2001(D-2)	72,450,000		72,450,000	0
Sewage Disposal System Revenue Bonds, Series 2001(E)	139,080,000		139,080,000	0
Sewage Disposal System Revenue Bonds, Series 2005(A)				273,355,000
Sewage Disposal System Revenue Refunding Bonds, Series 2005(B)				40,215,000
Sewage Disposal System Revenue Refunding Bonds, Series 2005(C)				63,160,000
Total Second Lien Bonds	<u>\$342,080,000</u>		<u>\$342,080,000</u>	<u>\$376,730,000</u>
SRF Junior Lien Bonds(1)				
Sewage Disposal System Revenue Bonds, Series 2000-SRF1	\$53,475,000	(1)	\$ 42,368,275	\$ 0
Sewage Disposal System Revenue Bonds, Series 2000-SRF2	65,000,000	(1)	53,541,582	0
Sewage Disposal System Revenue Bonds, Series 2001-SRF1	82,200,000	(1)	82,200,000	0
Sewage Disposal System Revenue Bonds, Series 2001-SRF2	59,850,000	(1)	59,850,000	0
Sewage Disposal System Revenue Bonds, Series 2002-SRF1	18,985,000	(1)	17,849,339	0
Sewage Disposal System Revenue Bonds, Series 2002-SRF2	1,970,000	(1)	1,142,253	0
Sewage Disposal System Revenue Bonds, Series 2002-SRF3	43,740,000	(1)	10,002,442	0
Sewage Disposal System Revenue Bonds, Series 2003-SRF1	48,520,000	(1)	24,580,387	0
Sewage Disposal System Revenue Bonds, Series 2003-SRF2	25,800,000	(1)	11,058,716	0
Sewage Disposal System Revenue Bonds, Series 2004-SRF1	2,910,000	(1)	133,136	0
Sewage Disposal System Revenue Bonds, Series 2004-SRF2	18,690,000	(1)	1,613,167	0
Sewage Disposal System Revenue Bonds, Series 2004-SRF3	12,920,000	(1)	1,047,570	0
Total SRF Junior Lien Bonds	<u>\$ 434,060,000</u>		<u>\$ 306,386,867</u>	<u>\$ 0</u>
Total All Bonds	<u>\$3,109,748,302</u>		<u>\$2,365,301,174</u>	<u>\$376,730,000</u>

(1) Stated Principal amount of State Revolving Fund Bonds issued as part of the State of Michigan's Revolving Loan Program. As the Department draws additional amounts from time to time hereafter, the outstanding principal amounts of such Bonds will correspondingly increase. It is anticipated that the maximum amounts will not be fully drawn until Fiscal Year 2006.

(2) Includes Refunded Bonds to be defeased upon issuance of 2005 Bonds.

SOURCE: The Department.

Debt Service Schedule

Fiscal Year Ending June 30 ⁽¹⁾	Total Senior Lien Debt Service ⁽²⁾	Outstanding Second Lien Debt Service ⁽³⁾	2005 Bonds Principal	2005 Bonds Interest ⁽⁴⁾	2005 Bonds Debt Service ⁽⁴⁾	Total Second Lien Debt Service	Total SRF Junior Lien Debt Service ⁽⁵⁾	Total System Debt Service
2005	\$ 99,492,452	\$ 13,973,166	\$ 0	\$ 1,362,130	\$ 1,362,130	\$ 15,335,296	\$ 12,875,163	\$ 127,702,911
2006	95,827,908	14,224,760	195,000	5,260,355	5,455,355	19,680,115	24,613,959	140,121,982
2007	95,976,353	14,224,760	100,000	8,596,174	8,696,174	22,920,934	27,574,690	146,471,977
2008	93,443,998	14,228,974	2,285,000	18,615,048	20,900,048	35,129,022	27,546,228	156,119,248
2009	96,391,505	13,790,870	250,000	18,501,248	18,751,248	32,542,117	27,549,534	156,483,157
2010	96,399,558	13,796,185	420,000	18,493,998	18,913,998	32,710,182	27,541,525	156,651,265
2011	92,746,826	13,863,327	3,900,000	18,481,398	22,381,398	36,244,725	27,552,056	156,543,607
2012	90,022,056	13,020,933	7,455,000	18,296,548	25,751,548	38,772,481	27,550,416	156,344,952
2013	94,342,967	12,300,663	4,645,000	17,942,598	22,587,598	34,888,260	27,546,816	156,778,042
2014	86,212,471	12,486,894	12,540,000	17,720,923	30,260,923	42,747,817	27,550,669	156,510,957
2015	86,917,188	12,310,813	12,845,000	17,102,673	29,947,673	42,258,485	27,551,716	156,727,389
2016	96,261,468	12,245,157	5,080,000	16,466,793	21,546,793	33,791,950	27,549,716	157,603,134
2017	96,026,420	12,476,744	5,340,000	16,219,168	21,559,168	34,035,911	27,544,213	157,606,544
2018	96,196,506	12,310,813	5,585,000	15,957,618	21,542,618	33,853,430	27,555,081	157,605,017
2019	95,792,013	12,486,894	6,110,000	15,683,918	21,793,918	34,280,812	27,541,672	157,614,497
2020	94,519,588	12,312,300	8,215,000	15,386,718	23,601,718	35,914,017	27,549,038	157,982,642
2021	84,832,239	12,476,744	19,045,000	14,984,568	34,029,568	46,506,311	27,546,481	158,885,031
2022	98,088,602	12,310,813	11,915,000	13,988,363	25,903,363	38,214,175	27,553,628	163,856,405
2023	107,358,539	15,068,670	970,000	13,345,756	14,315,756	29,384,427	27,545,194	164,288,160
2024	104,089,925	30,182,525	490,000	13,304,531	13,794,531	43,977,056	18,676,159	166,743,140
2025	97,801,358	29,995,094	6,345,000	13,283,706	19,628,706	49,623,800	18,682,034	166,107,193
2026	116,674,182	30,079,479	4,475,000	12,966,456	17,441,456	47,520,935	3,083,063	167,228,180
2027	116,942,649	29,759,808	7,290,000	12,742,706	20,032,706	49,792,514	0	166,735,164
2028	117,641,401	29,065,474	7,650,000	12,378,206	20,028,206	49,093,681	0	166,735,082
2029	118,056,173	28,643,361	8,040,000	11,995,706	20,035,706	48,679,067	0	166,735,241
2030	77,981,706	68,725,024	8,435,000	11,593,706	20,028,706	88,753,730	0	166,735,437
2031	76,794,156	69,912,513	7,970,000	11,171,956	19,141,956	89,054,469	0	165,848,625
2032	50,902,250	95,803,311	8,375,000	10,763,494	19,138,494	114,941,805	0	165,844,055
2033	130,691,935	0	24,820,000	10,334,275	35,154,275	35,154,275	0	165,846,210
2034	0	0	90,705,000	9,062,250	99,767,250	99,767,250	0	99,767,250
2035	0	0	95,240,000	4,642,000	99,882,000	99,882,000	0	99,882,000
Total	\$ 2,804,374,392	\$ 662,076,069	\$ 376,730,000	\$ 416,644,982	\$ 793,374,982	\$ 1,455,451,051	\$ 546,279,049	\$ 4,806,104,493

⁽¹⁾ Amounts due July 1 are shown as debt service for the preceding Fiscal Year ending June 30 (the amounts actually required to be set aside in that Fiscal Year). For example, debt service payments due July 1, 2005 are shown in the Fiscal Year ending June 30, 2005.

⁽²⁾ Debt service on variable rate Senior Lien Bonds with fixed interest rate swap agreements is calculated at the respective swap rates. Excludes debt service on the Refunded Bonds to be refunded with proceeds of the 2005 Bonds.

⁽³⁾ Debt service on variable rate Second Lien Bonds is calculated in accordance with the Additional Bonds test and the other provisions of the Ordinance.

⁽⁴⁾ Net of capitalized interest.

⁽⁵⁾ Based on projected drawdown and expenditure of SRF-funded projects.

Totals may not add due to rounding.

SOURCE: The Department.

SECURITY AND SOURCES OF PAYMENT FOR THE 2005 BONDS

Nature of Obligations under the Ordinance

Sewage System Bonds and Ancillary Obligations are self-liquidating obligations of the City, payable solely from the Pledged Assets under the Ordinance. "Ancillary Obligations" are obligations incurred by the City with respect to particular Sewage System Bonds and consist of Hedge Obligations and Reimbursement Obligations. Hedge Obligations are payment obligations under a hedge agreement, such as an interest rate swap, other than the fees and expenses to be paid in the ordinary course of the transaction. Reimbursement Obligations are repayment obligations under a credit enhancement or liquidity facility, other than the fees and expenses to be paid in the ordinary course of the transaction. The fees and expenses payable by the City in connection with any hedge agreement, credit enhancement or liquidity facility in the ordinary course of the transaction (the "Ancillary Obligation Fees and Expenses") are treated separately under the Ordinance from payments on Sewage System Bonds and Ancillary Obligations and have a different payment priority, as described under "Priority Lien and Payment Status" below.

Pledged Assets

"Pledged Assets" under the Ordinance consist of:

- Net Revenues (defined below);
- the funds and accounts established by or pursuant to the Ordinance except for the Operation and Maintenance Fund and the Construction Fund and any account thereof;
- investments of amounts credited to any fund, account or subaccount that is a Pledged Asset; and
- any income or gain realized from investments that are Pledged Assets to the extent that such income or gain is not a Net Revenue.

"Revenues" are defined in the Ordinance as the revenues of the City from the System (construed in accordance with the Act) and include amounts received by the City under its hedge agreements with respect to Sewage System Bonds, including any termination payments, and income earned and gains realized from the investment of amounts in the various funds, accounts and subaccounts established by the Ordinance other than the Construction Fund for any Fiscal Year earnings on the Construction Fund are not transferred to the Receiving Fund by the Board. The Board's current policy is to transfer Construction Fund earnings to the Receiving Fund, and therefore such earnings are included in Revenues. "Net Revenues" are defined in the Ordinance as Revenues except for those transferred to the Operation and Maintenance Fund.

Priority Lien and Payment Status

Sewage System Bonds are secured under the Ordinance in accordance with their relative priorities by a statutory lien on Pledged Assets, as described below. The Ordinance permits the City to secure Ancillary Obligations by a lien on Pledged Assets having the same or a lower priority than the lien securing the particular Sewage System Bonds to which the Ancillary Obligations relate. Ancillary Obligation Fees and Expenses have a higher payment status than Sewage System Bonds and Ancillary Obligations, as described below.

- All Ancillary Obligation Fees and Expenses are paid from Revenues in the Operation and Maintenance Fund on the same basis as operating and administrative fees and expenses of the System, with the result being that they are paid before debt service on the Sewage System Bonds and before Ancillary Obligations.

- Senior Lien Bonds and related Ancillary Obligations are secured by a first lien on Pledged Assets and rank first in the order of payment from Net Revenues.
- Second Lien Bonds (including the 2005 Bonds) and related Ancillary Obligations are secured by a lien on Pledged Assets second only to the Senior Lien Bonds and their related Ancillary Obligations, and rank second in order of payment from Net Revenues.
- SRF Junior Lien Bonds and related Ancillary Obligations have a lien subordinate to the liens securing all other Sewage System Bonds and their related Ancillary Obligations, and rank last in order of payment from Net Revenues.

Ordinance Flow of Funds

In accordance with the requirements of the Act and the City Charter, the Ordinance establishes certain funds and accounts for the System and permits the establishment of additional funds for additional priorities of Sewage System Bonds. All funds and accounts are held and managed by the City. All Revenues are set aside as collected and credited to the Receiving Fund. As of the first day of each month, amounts credited to the Receiving Fund are transferred seriatim into the following funds and accounts but only within the respective limitations and only if the maximum amount within such limitation has been credited to the preceding fund or account:

First: to the Operation and Maintenance Fund, a sum sufficient to provide for the payment of the next month's expenses of administration and operation of the System (including Ancillary Obligation Fees and Expenses) and such current expenses for the maintenance thereof as may be necessary to preserve the same in good repair and working order;

Second: to the Senior Lien Bond Debt Service Account, an amount that, when added to all other amounts then on deposit therein, shall equal the Debt Service Installment Requirement for Senior Lien Bonds and related Ancillary Obligations of the same priority as of the first day of such month;

Third: to the Senior Lien Bond Reserve Account, an amount that when added to all other amounts then on deposit therein shall equal the Reserve Requirement for Senior Lien Bonds;

Fourth: to the Interest and Redemption Fund established for each priority of Junior Lien Bonds, beginning with the Second Lien Bonds (including the 2005 Bonds) and continuing in descending order of priority to, and including, the SRF Junior Lien Bonds:

First: to the Debt Service Account established for such priority, an amount that, when added to all other amounts then on deposit therein, shall equal the Debt Service Installment Requirement for Junior Lien Bonds and related Ancillary Obligations of the same priority as of the first day of such month; and

Second: to the Reserve Account, if any, established for such priority an amount that, when added to all other amounts then on deposit therein, shall equal the Reserve Requirement for such priority of Junior Lien Bonds;

Fifth: to the Extraordinary Repair and Replacement Reserve Fund, the amount of the Extraordinary Repair and Replacement Minimum Requirement so long as the balance thereof is less than the Extraordinary Repair and Replacement Maximum Requirement, except that an amount withdrawn from such Fund and transferred to the Improvement and Extension Fund as provided in the Ordinance, shall be deducted from the Extraordinary Repair and Replacement Maximum Requirement in the Fiscal Year of withdrawal; and

Sixth: to the Improvement and Extension Fund, such amount, if any, that the Board may deem advisable; provided that no amount shall be deposited therein or credited thereto for so long as a borrowing from the Extraordinary Repair and Replacement Reserve Fund remains unpaid.

Amounts remaining in the Receiving Fund as of the last day of each Fiscal Year shall be credited to the Surplus Fund to be used for any purposes related to the System. The use and application of amounts in the funds and accounts established by the Ordinance are set forth in Appendix D — "The Ordinance."

Reverse Flow of Funds

If amounts in the Receiving Fund are insufficient to provide for current requirements of the Operation and Maintenance Fund and each Interest and Redemption Fund (including the Reserve Account, if any, therein), then any amounts or securities held in the Surplus Fund, the Improvement and Extension Fund and the Extraordinary Repair and Replacement Reserve Fund shall be credited or transferred, first, to the Operation and Maintenance Fund and second, to the particular Interest and Redemption Fund, to the extent of the insufficiency therein from the aforesaid funds in the order listed.

If any principal (and redemption premium, if any) of or interest on Sewage System Bonds of a priority or any related Ancillary Obligations become due (whether on a stated or scheduled date, by reason of call for redemption or otherwise), and there are insufficient amounts for the payment thereof in the Interest and Redemption Fund established for such priority of Sewage System Bonds and Ancillary Obligations after applying payments in the Reserve Account, if any, established for such priority of Sewage System Bonds, then there shall be applied to such payment amounts in each Interest and Redemption Account established for each lower priority of Sewage System Bonds, beginning with the lowest priority and proceeding *seriatim* in ascending order of priority, until such payments are made in full.

Reserve Accounts and Reserve Requirements

The Ordinance establishes a Senior Lien Bond Reserve Account and a Second Lien Bond Reserve Account, and authorizes a Reserve Account to be established for other priorities of Junior Lien Bonds but no such other Junior Lien Bond Reserve Account has been established to date. Amounts in a Reserve Account may be used solely for the payment of the principal (and premium, if any) of and interest on the Sewage System Bonds and Ancillary Obligations of the priority for which such Reserve Account was established, as to which there would otherwise be a default.

The Reserve Requirement for Senior Lien Bonds is the maximum Annual Debt Service on all Senior Lien Bonds then outstanding for the current or any future Fiscal Year or the maximum amount permitted by the Internal Revenue Code of 1986, as amended (the "Code"). The Reserve Requirement for Second Lien Bonds is the average Annual Debt Service on all Second Lien Bonds then outstanding for the current or any future Fiscal Year or the maximum amount permitted by the Code. If a Reserve Account is established for any other priority of Junior Lien Bonds, the Reserve Requirement for such other Junior Lien Bonds shall be the amount set forth in the supplemental action establishing such Reserve Account, and if no amount is set forth, shall be the average Annual Debt Service on all Junior Lien Bonds of such priority then outstanding for the current or any future Fiscal Year or the maximum amount permitted by the Code.

Concurrently with the issuance of Sewage System Bonds of a priority for which a Reserve Account has been or is being established, the Ordinance requires there be credited to such Reserve Account the amount that, added to the amount on deposit in such account or credited thereto, equals the Reserve Requirement for the Bonds then to be issued and all Bonds of the same priority then outstanding. The Ordinance permits the use of Credit Enhancement to fund any Reserve Account or to substitute for amounts on deposit in a Reserve Account, if the provider is rated in the highest rating category of each Rating Agency then rating the Bonds having the benefit of such Reserve Account, and the City receives

an opinion of nationally recognized bond counsel to the effect that such Credit Enhancement will not adversely affect the tax-exempt status of interest on any Bonds.

Debt Service Reserve Surety Bond

The City has received a commitment from MBIA Insurance Corporation (the "Insurer") to issue a surety bond (the "Debt Service Reserve Surety Bond") for the 2005 Bonds in an initial face amount equal to the Reserve Requirement for the 2005 Bonds. The Debt Service Reserve Surety Bond will provide that upon notice from the Transfer Agent to the Insurer to the effect that insufficient amounts are on deposit in the Second Lien Bond Debt Service Account to pay the principal of (at maturity or pursuant to mandatory redemption requirements) and interest on the 2005 Bonds, the Insurer will promptly deposit with the Transfer Agent an amount sufficient to pay the principal of and interest on the 2005 Bonds or the available amount of the Debt Service Reserve Surety Bond, whichever is less.

The available amount of the Debt Service Reserve Surety Bond is the initial face amount of the Debt Service Reserve Surety Bond less the amount of any previous deposits by the Insurer with the Transfer Agent which have not been reimbursed by the City. The City and the Insurer will enter into a Financial Guaranty Agreement dated the date of issuance of the 2005A Bonds and 2005B Bonds (the "Agreement"). Pursuant to the Agreement, the City is required to reimburse the Insurer, within one year of any deposit, the amount of such deposit made by the Insurer with the Transfer Agent under the Debt Service Reserve Surety Bond. Such reimbursement shall be made only after all required deposits to the Operation and Maintenance Fund, the Debt Service Account and Reserve Account for the Senior Lien Bonds, and the Debt Service Account for the Second Lien Bonds have been made.

Under the terms of the Agreement, the Transfer Agent is required to reimburse the Insurer, with interest, until the face amount of the Debt Service Reserve Surety Bond is reinstated before any deposit is made to the Surplus Fund. No optional redemption of 2005 Bonds may be made until the Insurer's Debt Service Reserve Surety Bond is reinstated. The Debt Service Reserve Surety Bond will be held by the Transfer Agent in the Second Lien Bond Reserve Account and is provided as an alternative to the City depositing funds equal to the Reserve Requirement for the 2005 Bonds and any outstanding Second Lien Bonds. The Debt Service Reserve Surety Bond will be issued and the premium therefor will be fully paid by the City at the time of delivery of the 2005A Bonds and 2005B Bonds. The Debt Service Reserve Surety Bond expires July 1, 2035.

Certain Other Funds

As described in "Reverse Flow of Funds" above, amounts held in certain other funds established under the Ordinance may be transferred to the Operation and Maintenance Fund and the Interest and Redemption Fund in the event of a shortfall of Revenues.

Extraordinary Repair and Replacement Fund. The Extraordinary Repair and Replacement Fund is funded by monthly transfers of Revenues in minimum amounts equal to 1/12 of 3% of the budgeted operation and maintenance expense of the System for the Fiscal Year, until the balance in such fund equals 15% of the budgeted operation and maintenance expense of the System for such Fiscal Year. Amounts in the Extraordinary Repair and Replacement Fund may be used to pay costs of making major unanticipated repairs and replacements to the System which individually cost or are reasonably expected to cost in excess of \$1 million. The Ordinance authorizes the Finance Director, on and after the first day of each Fiscal Year, to transfer not more than 50% of the balance in the Extraordinary Repair and Replacement Fund to the Improvement and Extension Fund, but only if in the month of such transfer the full amount of the minimum monthly transfer has been credited to the fund, and the amounts of all prior transfers from the fund to the Improvement and Extension Fund have been restored in full.

Improvement and Extension Fund. The Improvement and Extension Fund is to be used for improvements, enlargements, extensions or betterment to the System.

Rate Stabilization Fund. The Ordinance permits the Board to create a Rate Stabilization Fund, the purpose of which is to enable the City to set aside Prior Revenues to augment Revenues in future years in order to satisfy the requirements of the Ordinance with respect to rate covenants related to Sewage System Bonds. See "Rate Covenant" below for a description of the restriction on use of transfers from the Rate Stabilization Fund in meeting the rate covenant's coverage requirements. Any funding of the Rate Stabilization Fund is at the sole discretion of the Board.

Only Prior Revenues may be deposited in the Rate Stabilization Fund. "Prior Revenues" are Revenues or Net Revenues only to the extent they may be applied to any lawful purpose of the System, in effect limiting Prior Revenues to Net Revenues that, in the Fiscal Year of receipt, exceed the required deposits described above under "Ordinance Flow of Funds." The deposit of Prior Revenues into the Rate Stabilization Fund is limited in any Fiscal Year as described in Appendix D — "The Ordinance — Rate Stabilization Fund." Except as reserved in connection with a coverage determination, amounts on deposit in the Rate Stabilization Fund may be applied for any lawful purpose of the System.

Rate Covenant

The Bond Ordinance requires that the Board fix and revise rates for sewage disposal service from time to time as may be expected to be necessary to produce the greater of:

1. The amounts required to provide for:
 - a. the payment of the expenses for maintenance of the System as are necessary to preserve the same in good repair and working order;
 - b. the payment of Indebtedness coming due for the Fiscal Year of calculation;
 - c. the creation and maintenance of reserves therefor as required by the Ordinance or any ordinance or resolution adopted in accordance with the terms thereof; and
 - d. such other expenditures and funds for the System as the Ordinance may require; and
2. The Required Combined Coverage.

For purposes of the rate covenant, "Required Combined Coverage" means Net Revenues projected for the Fiscal Year of calculation at least equal to 120% of Senior Lien Indebtedness coming due for such Fiscal Year, 110% of combined Senior Lien Indebtedness and Second Lien Indebtedness coming due for such Fiscal Year, and 100% of combined Senior Lien Indebtedness, Second Lien Indebtedness and SRF Junior Lien Bonds coming due for such Fiscal Year.

The Ordinance defines "Indebtedness" as (without duplication) (i) principal of and interest on Sewage System Bonds outstanding in the Fiscal Year of calculation, (ii) Reimbursement Obligations, and (iii) amounts payable by the City under a Hedge by reason of the early termination thereof. The City may take into account transfers from the Rate Stabilization Fund in calculating compliance with the rate covenant, but the City shall also comply with the rate covenant by maintaining rate coverage percentages of 100 without taking into account any transfers from the Rate Stabilization Fund.

Enforceability of Rates

The charges for sewage disposal service are a lien on the respective premises, and the Ordinance provides for certain means of enforcement including the right to shut off and discontinue the supply of water to any premises for the nonpayment of sewage disposal rates when due.

The Act provides that the rates charged for services furnished by any public improvement constructed under the Act shall not be subject to supervision or regulation by any State bureau, board, commissioner or other like instrumentality or agency thereof.

Additional Bonds

The City intends to issue additional Sewage System Bonds to finance the System's Capital Improvement Program, but does not intend to do so, other than for SRF Junior Lien Bonds, prior to July 1, 2007. Additional Sewage System Bonds may be issued either as Senior Lien Bonds, Second Lien Bonds or other Junior Lien Bonds (of which only SRF Junior Lien Bonds are authorized at present). See "THE CAPITAL IMPROVEMENT PROGRAM."

General Authority. The City may issue Sewage System Bonds of any Priority (herein, "Additional Bonds") for repairs, extensions, enlargements, and improvements to the System (including repaying amounts withdrawn from the Extraordinary Repair and Replacement Reserve Fund), refunding all or a part of any Outstanding Sewage System Bonds and paying the costs of issuing such Additional Bonds, including deposits, if any, to be made to any Reserve Account established or to be established for such Additional Bonds or any other Sewage System Bonds, if, but only if, there is Required Combined Coverage under either the Projected Net Revenues Test or the Historical Net Revenues Test.

Projected Net Revenues Test. For purposes of determining the Required Coverage Requirement for the Projected Net Revenues Test, "Required Combined Coverage" means, for a priority of Sewage System Bonds for which a determination is to be made, that (i) the result produced by dividing the Inflows by the Outflows for the highest priority of Sewage System Bonds so required for such determination and performing the same calculation for each successively lower priority of Sewage System Bonds and expanding the divisor in each instance by the sum of the outflows for such priority (a "Priority") and each higher Priority, equals or exceeds (ii) the coverage requirement for the lowest Priority in each calculation, such that

Where

I =	Inflows are Net Revenues of the System for the then current or the next succeeding Fiscal Year
O =	Outflows are the maximum composite Annual Debt Service in any Fiscal Year on Outstanding Sewage System Bonds and the Additional Sewage System Bonds to be issued:
	O ₁ Senior Lien Bonds
	O ₂ Second Lien Bonds
	O ₃ Junior Lien SRF Bonds
C =	Coverage requirements:
	C ₁ for Senior Lien Bonds 120%
	C ₂ for Second Lien Bonds 110
	C ₃ for Junior Lien SRF Bonds 100

Required Combined Coverage is:

$$[1] \frac{I}{O_1} \geq C_1 \text{ and } [2] \frac{I}{(O_1 + O_2)} \geq C_2 \text{ and } [3] \frac{I}{(O_1 + O_2 + O_3)} \geq C_3$$

Projected Net Revenues may include 100% of the estimated increase in Net Revenues to accrue as a result of the acquisition of the repairs, extensions, enlargements and improvements to the System to be paid for in whole or in part from the proceeds of the Additional Sewage System Bonds. In projecting Net Revenues, the City shall engage the services of and be guided by a consultant of national reputation for advising municipalities with respect to setting rates and charging for the use of sewage disposal systems.

Annual Debt Service is a defined term in the Ordinance, and reference should be made to Appendix D — "The Ordinance" for the definition and the rules for determining Annual Debt Service.

If any additional Sewage System Bonds (any of such, the "Refunding Sewage System Bonds") are to be issued to refund Outstanding Sewage System Bonds (the "Sewage System Bonds to be Refunded"), the Annual Debt Service to be used for determining the Required Combined Coverage shall

Additional Bonds

The City intends to issue additional Sewage System Bonds to finance the System's Capital Improvement Program, but does not intend to do so, other than for SRF Junior Lien Bonds, prior to July 1, 2007. Additional Sewage System Bonds may be issued either as Senior Lien Bonds, Second Lien Bonds or other Junior Lien Bonds (of which only SRF Junior Lien Bonds are authorized at present). See "THE CAPITAL IMPROVEMENT PROGRAM."

General Authority. The City may issue Sewage System Bonds of any Priority (herein, "Additional Bonds") for repairs, extensions, enlargements, and improvements to the System (including repaying amounts withdrawn from the Extraordinary Repair and Replacement Reserve Fund), refunding all or a part of any Outstanding Sewage System Bonds and paying the costs of issuing such Additional Bonds, including deposits, if any, to be made to any Reserve Account established or to be established for such Additional Bonds or any other Sewage System Bonds, if, but only if, there is Required Combined Coverage under either the Projected Net Revenues Test or the Historical Net Revenues Test.

Projected Net Revenues Test. For purposes of determining the Required Coverage Requirement for the Projected Net Revenues Test, "Required Combined Coverage" means, for a priority of Sewage System Bonds for which a determination is to be made, that (i) the result produced by dividing the Inflows by the Outflows for the highest priority of Sewage System Bonds so required for such determination and performing the same calculation for each successively lower priority of Sewage System Bonds and expanding the divisor in each instance by the sum of the outflows for such priority (a "Priority") and each higher Priority, equals or exceeds (ii) the coverage requirement for the lowest Priority in each calculation, such that

Where

I =	Inflows are Net Revenues of the System for the then current or the next succeeding Fiscal Year
O =	Outflows are the maximum composite Annual Debt Service in any Fiscal Year on Outstanding Sewage System Bonds and the Additional Sewage System Bonds to be issued:
	O ₁ Senior Lien Bonds
	O ₂ Second Lien Bonds
	O ₃ Junior Lien SRF Bonds
C =	Coverage requirements:
	C ₁ for Senior Lien Bonds 120%
	C ₂ for Second Lien Bonds 110
	C ₃ for Junior Lien SRF Bonds 100

Required Combined Coverage is:

$$[1] \frac{I}{O_1} \geq C_1 \text{ and } [2] \frac{I}{(O_1 + O_2)} \geq C_2 \text{ and } [3] \frac{I}{(O_1 + O_2 + O_3)} \geq C_3$$

Projected Net Revenues may include 100% of the estimated increase in Net Revenues to accrue as a result of the acquisition of the repairs, extensions, enlargements and improvements to the System to be paid for in whole or in part from the proceeds of the Additional Sewage System Bonds. In projecting Net Revenues, the City shall engage the services of and be guided by a consultant of national reputation for advising municipalities with respect to setting rates and charging for the use of sewage disposal systems.

Annual Debt Service is a defined term in the Ordinance, and reference should be made to Appendix D — "The Ordinance" for the definition and the rules for determining Annual Debt Service.

If any additional Sewage System Bonds (any of such, the "Refunding Sewage System Bonds") are to be issued to refund Outstanding Sewage System Bonds (the "Sewage System Bonds to be Refunded"), the Annual Debt Service to be used for determining the Required Combined Coverage shall

be the Annual Debt Service on the Refunding Sewage System Bonds and not the Annual Debt Service on the Sewage System Bonds to be Refunded.

Historical Net Revenues Test. For purposes of determining the Required Coverage Requirement for the Historical Net Revenues Test, "Required Combined Coverage" means, for priority of Sewage System Bonds for which a determination is to be made, that (i) the result produced by dividing the Inflows by the Outflows for the highest priority of Sewage System Bonds so required for such determination and performing the same calculation for each successively lower priority of Sewage System Bonds and expanding the divisor in each instance by the sum of the outflows for such priority (a "Priority") and each higher Priority, equals or exceeds (ii) the coverage requirement for the lowest Priority in each calculation, such that

Where

I =	Inflows are the actual Net Revenues of the System for the immediately preceding audited Fiscal Year	
O =	Outflows are the maximum composite Annual Debt Service in any Fiscal Year on Outstanding Sewage System Bonds and the Additional Sewage System Bonds to be issued:	
	O ₁ Senior Lien Bonds	
	O ₂ Second Lien Bonds	
	O ₃ Junior Lien SRF Bonds	
C =	Coverage requirements:	
	C ₁ for Senior Lien Bonds	120%
	C ₂ for Second Lien Bonds	110
	C ₃ for Junior Lien SRF Bonds	100

Required Combined Coverage is:

$$[1] \frac{I}{O_1} \geq C_1 \text{ and } [2] \frac{I}{(O_1 + O_2)} \geq C_2 \text{ and } [3] \frac{I}{(O_1 + O_2 + O_3)} \geq C_3$$

Instead of the immediately preceding audited Fiscal Year, the City may use any audited Fiscal Year ending not more than sixteen months prior to the date of delivery of such Additional Sewage System Bonds.

If any change in the rates, fees and charges of the System has been authorized at or prior to the date of sale of such Additional Sewage System Bonds, the Net Revenues for the particular preceding Fiscal Year shall be augmented by an amount reflecting the effect of such change had the System's billings during such Fiscal Year been at the increased rates.

Net Revenues for the particular preceding audited Fiscal Year also may be augmented by 100% of the estimated increase in Net Revenues to accrue as a result of the acquisition of the repairs, extensions, enlargements and improvements to the System to be paid for in whole or in part from the proceeds of such Additional Sewage System Bonds and 100% of any acquisition, extension or connection which was made subsequent to the end of the particular preceding audited Fiscal Year.

With respect to augmentation of Net Revenues, the City shall engage the services of and receive the certificate of a consultant of national reputation for advising municipalities with respect to setting rates and charges for the use of sewage disposal systems regarding the existence of such conditions.

Alternate Test for Refundings. The City may issue Sewage System Bonds of any Priority (herein, "Additional Sewage System Bonds") without regard to the above for the purpose of refunding all or part of Sewage System Bonds then Outstanding and paying costs of issuing the Refunding Sewage System Bonds, including deposits which may be made to any Reserve Account established or to be established for such Additional Sewage System Bonds or any other Sewage System Bonds if, but only if the combined Annual Debt Service coming due in the current Fiscal Year and each Fiscal Year thereafter

until maturity on (A) the Additional Sewage System Bonds and (B) giving effect to the refunding, all Outstanding unrefunded Sewage System Bonds of equal and higher Priority is less than the combined Annual Debt Service coming due in the current Fiscal Year and each Fiscal Year thereafter until maturity on all equal and higher Priority Sewage System Bonds, without giving effect to the refunding.

Amendments Without Consent

The Ordinance may be amended or supplemented from time to time by Act of Council or Supplemental Action without consent of the Holders of Sewage System Bonds:

- (1) To issue Sewage System Bonds of any Priority;
- (2) To add to the covenants and agreements of the City in the Ordinance contained, other covenants and agreements thereafter to be observed or to surrender, restrict or limit any right or power reserved to or conferred upon the City (including but not limited to the right to issue Sewage System Bonds or incur other Secured Obligations of, in either case, any Priority);
- (3) To make such provisions for the purpose of curing any ambiguity, or curing, correcting or supplementing any defective provisions contained in the Ordinance, or in regard to matters or questions arising under the Ordinance, as the City may deem necessary or desirable;
- (4) To increase the size or scope of the System; and
- (5) To amend or supplement the Ordinance in any respect with regard to one or more Priorities of Sewage System Bonds so long as such amendment does not materially adversely affect the Holders of Outstanding Sewage System Bonds.

The Ordinance provides that no Holders of a Priority of Sewage System Bonds shall be "materially adversely affected" for the purposes of the Ordinance by the change of any coverage percentage established for any other Priority of Sewage System Bonds, and no amendment of or supplement to the Ordinance that provides for or facilitates the issuance of Sewage System Bonds or incurs Ancillary Obligations or Ancillary Obligations Fees and Expenses, in either case, of any Priority shall "materially adversely affect" the Holders of Sewage System Bonds of any other Priority for the purposes of the Ordinance so long as such amendment does not change any coverage percentage established for such Priority of Sewage System Bonds or is not an amendment that requires the consent of the Holder of such Sewage System Bonds because it (i) reduces the aforesaid percentage of Holders of Sewage System Bonds required to consent to an amendment to the Ordinance, (ii) extends the fixed maturity of such Holder's Sewage System Bonds or reduces the rate of interest thereon or extends the time of payment of interest, or reduces the amount of the principal or redemption premium thereof, or reduces or extends the time for payment of any premium payable on the redemption thereof or (iii) changes the Priority of such Holder's Sewage System Bonds or deprives such Holder of the right to payment from Pledged Assets.

The Ordinance further provides that a confirmation of the rating of the Sewage System Bonds held by Holders affected by any amendment of or supplement to the Ordinance shall be conclusive evidence that such Holders were not materially adversely affected by such amendment or supplement.

Trustee

The City has appointed U.S. Bank National Association, Detroit, Michigan as trustee (the "Trustee"). The Trustee does not have an active role under the Ordinance, and funds and accounts established under the Ordinance are not held by the Trustee, and the Trustee is not responsible for the administration, investment or disbursement of the monies allocated to such funds and accounts.

Remedies

The Holder or Holders of Sewage System Bonds representing in the aggregate not less than 20% of the entire principal amount thereof then Outstanding, may, by suit, action, mandamus or other proceedings, protect and enforce the statutory lien upon Pledged Assets, and may, by suit, action, mandamus or other proceedings, enforce and compel performance of all duties of the officers of the City, including the fixing of sufficient rates, the collection of Revenues, the proper segregation of the Revenues of the System and the proper application thereof. The statutory lien upon Pledged Assets, however, shall not be construed to compel the sale of the System or any part thereof.

If there is a default in the payment of the principal (and premium, if any) of and interest on any Sewage System Bonds, any court having jurisdiction in any proper action may appoint a receiver to administer and operate the System on behalf of the City and, under the direction of the court, perform all of the duties of the officers of the City more particularly set forth herein and in Act 94.

A Holder of Sewage System Bonds shall have all other rights and remedies given by Act 94 and by law for the payment and enforcement of the Sewage System Bonds and the security therefor.

BOND INSURANCE

In connection with the issuance of each series of the 2005 Bonds, the City will obtain a financial guaranty insurance policy from MBIA Insurance Corporation (the "Bond Insurer" or "MBIA"). Neither the City nor the Underwriters have undertaken any independent investigation of the operations of the Bond Insurer and make no representations as to the accuracy or adequacy of the information provided by the Bond Insurer herein. Additionally, neither the City nor the Underwriters make any representations as to the ability of the Bond Insurer to make payments under the financial guaranty insurance policies or on the debt service reserve surety bond.

The MBIA Insurance Corporation Insurance Policy

The following information has been furnished by MBIA Insurance Corporation ("MBIA") for use in this Official Statement. Reference is made to Appendix E for a specimen of MBIA's policy.

MBIA's policy unconditionally and irrevocably guarantees the full and complete payment required to be made by or on behalf of the City to the Transfer Agent or its successor of an amount equal to (i) the principal of (either at the stated maturity or by an advancement of maturity pursuant to a mandatory sinking fund payment) and interest on, the 2005 Bonds as such payments shall become due but shall not be so paid (except that in the event of any acceleration of the due date of such principal by reason of mandatory or optional redemption or acceleration resulting from default or otherwise, other than any advancement of maturity pursuant to a mandatory sinking fund payment, the payments guaranteed by MBIA's policy shall be made in such amounts and at such times as such payments of principal would have been due had there not been any such acceleration); and (ii) the reimbursement of any such payment which is subsequently recovered from any owner of the 2005 Bonds pursuant to a final judgment by a court of competent jurisdiction that such payment constitutes an avoidable preference to such owner within the meaning of any applicable bankruptcy law (a "Preference").

MBIA's policy does not insure against loss of any prepayment premium which may at any time be payable with respect to any 2005 Bonds. MBIA's policy does not, under any circumstance, insure against loss relating to: (i) optional or mandatory redemptions (other than mandatory sinking fund redemptions); (ii) any payments to be made on an accelerated basis; (iii) payments of the purchase price of 2005 Bonds upon tender by an owner thereof; or (iv) any Preference relating to (i) through (iii) above. MBIA's policy also does not insure against nonpayment of principal of or interest on the 2005 Bonds resulting from the insolvency, negligence or any other act or omission of the Transfer Agent or any other paying agent for the 2005 Bonds.

Upon receipt of telephonic or telegraphic notice, such notice subsequently confirmed in writing by registered or certified mail, or upon receipt of written notice by registered or certified mail, by MBIA from the Transfer Agent or any owner of a 2005 Bond the payment of an insured amount for which is then due, that such required payment has not been made, MBIA on the due date of such payment or within one business day after receipt of notice of such nonpayment, whichever is later, will make a deposit of funds, in an account with U.S. Bank Trust National Association, in New York, New York, or its successor, sufficient for the payment of any such insured amounts which are then due. Upon presentment and surrender of such 2005 Bonds or presentment of such other proof of ownership of the 2005 Bonds, together with any appropriate instruments of assignment to evidence the assignment of the insured amounts due on the 2005 Bonds as are paid by MBIA, and appropriate instruments to effect the appointment of MBIA as agent for such owners of the 2005 Bonds in any legal proceeding related to payment of insured amounts on the 2005 Bonds, such instruments being in a form satisfactory to U.S. Bank Trust National Association, U.S. Bank Trust National Association shall disburse to such owners or the Trustee payment of the insured amounts due on such 2005 Bonds, less any amount held by the Transfer Agent for the payment of such insured amounts and legally available therefor.

MBIA

MBIA Insurance Corporation ("MBIA") is the principal operating subsidiary of MBIA Inc., a New York Stock Exchange listed company (the "Company"). The Company is not obligated to pay the debts of or claims against MBIA. MBIA is domiciled in the State of New York and licensed to do business in and subject to regulation under the laws of all 50 states, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, the Virgin Islands of the United States and the Territory of Guam. MBIA has three branches, one in the Republic of France, one in the Republic of Singapore and one in the Kingdom of Spain. New York has laws prescribing minimum capital requirements, limiting classes and concentrations of investments and requiring the approval of policy rates and forms. State laws also regulate the amount of both the aggregate and individual risks that may be insured, the payment of dividends by MBIA, changes in control and transactions among affiliates. Additionally, MBIA is required to maintain contingency reserves on its liabilities in certain amounts and for certain periods of time.

MBIA does not accept any responsibility for the accuracy or completeness of this Official Statement or any information or disclosure contained herein, or omitted herefrom, other than with respect to the accuracy of the information regarding the policy and MBIA set forth under the heading "BOND INSURANCE." Additionally, MBIA makes no representation regarding the 2005 Bonds or the advisability of investing in the 2005 Bonds.

The Financial Guarantee Insurance Policies are not covered by the Property/Casualty Insurance Security Fund specified in Article 76 of the New York Insurance Law.

MBIA Information

The following documents filed by the Company with the Securities and Exchange Commission (the "SEC") are incorporated herein by reference:

Company's Annual Report on Form 10-K for the year ended December 31, 2003; and
Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2004.

Any documents filed by the Company pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, after the date of this Official Statement and prior to the termination of the offering of the 2005 Bonds offered hereby shall be deemed to be incorporated by reference in this Official Statement and to be a part hereof. Any statement contained in a document incorporated or deemed to be incorporated by reference herein, or contained in this Official Statement, shall be deemed to be modified or superseded for purposes of this Official Statement to the extent that a

statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Official Statement.

The Company files annual, quarterly and special reports, information statements and other information with the SEC under File No. 1-9583. Copies of the SEC filings (including (1) the Company's Annual Report on Form 10-K for the year ended December 31, 2003, and (2) the Company's Quarterly Report on Form 10-Q for the quarters ended March 31, 2004, June 30, 2004 and September 30, 2004) are available (i) over the Internet at the SEC's web site at <http://www.sec.gov>; (ii) at the SEC's public reference room in Washington D.C.; (iii) over the Internet at the Company's web site at <http://www.mbia.com>; and (iv) at no cost, upon request to MBIA Insurance Corporation, 113 King Street, Armonk, New York 10504. The telephone number of MBIA is (914) 273-4545.

As of December 31, 2003, MBIA had admitted assets of \$9.9 billion (audited), total liabilities of \$6.2 billion (audited), and total capital and surplus of \$3.7 billion (audited) determined in accordance with statutory accounting practices prescribed or permitted by insurance regulatory authorities. As of September 30, 2004, MBIA had admitted assets of \$10.4 billion (unaudited), total liabilities of \$6.7 billion (unaudited), and total capital and surplus of \$3.7 billion (unaudited) determined in accordance with statutory accounting practices prescribed or permitted by insurance regulatory authorities.

Financial Strength Ratings of MBIA

Moody's Investors Service, Inc. rates the financial strength of MBIA "Aaa."

Standard & Poor's, a division of The McGraw-Hill Companies, Inc. rates the financial strength of MBIA "AAA."

Fitch Ratings rates the financial strength of MBIA "AAA."

Each rating of MBIA should be evaluated independently. The ratings reflect the respective rating agency's current assessment of the creditworthiness of MBIA and its ability to pay claims on its policies of insurance. Any further explanation as to the significance of the above ratings may be obtained only from the applicable rating agency.

The above ratings are not recommendations to buy, sell or hold the 2005 Bonds, and such ratings may be subject to revision or withdrawal at any time by the rating agencies. Any downward revision or withdrawal of any of the above ratings may have an adverse effect on the market price of the 2005 Bonds. MBIA does not guarantee the market price of the 2005 Bonds nor does it guarantee that the ratings on the 2005 Bonds will not be revised or withdrawn.

THE WATER AND SEWERAGE DEPARTMENT

Organization

The Sewage Disposal System is owned by the City and is operated, managed and accounted for as a separate enterprise fund (the "Sewage Fund") by the City through the Department, established under the City Charter. The Department is governed by a seven-member Board of Water Commissioners appointed by the Mayor. The Department is empowered to supply sewage disposal services within and outside the City and operates out of its own 20-story office building in downtown Detroit.

The City Charter provides that the Board shall periodically establish equitable rates for retail and wholesale sewage disposal services. Such rates are established with the concurrence of the City Council. See "FINANCIAL PROCEDURES - Rates." The Board authorizes and executes all service and

construction contracts. Certain contracting and other policy-making powers of the Board are subject to the approval or rejection of the City Council and the approval or veto of the Mayor. In addition, the Bonds and covenants with respect thereto are authorized pursuant to the Ordinances of the City Council, which have been approved by the Mayor.

Water supply service to the residents of the City and to a substantial portion of the Sewage Disposal System service area outside the City is also provided by the City through the Department and the Board. However, the Water Supply System is operated, managed and accounted for as a separate enterprise fund of the City apart from the Sewage Fund.

The Board

The members of the Board are appointed by and serve at the pleasure of the Mayor. The members serve four-year terms and the terms are staggered so that not more than two members' terms expire each year. Board members must be citizens of the United States and residents of Michigan. The City Charter provides that at least four members of the Board must be residents of the City. Currently the Board consists of four City residents plus one member each from Oakland County, western Wayne County (not including the City) and Macomb County. Board membership is as follows (dates in parentheses are dates of original appointment to Board).

Mary E. Blackmon, President (1989). Mrs. Blackmon was elected President in January 2003. She is a retiree of Ameritech, where she served as a Director of Public Relations and Associate Director of Urban and Civic Affairs. She is a current member of the Wayne County Regional Educational Service Agency Board of Education, where she has served since 1982. Mrs. Blackmon also served for 10 years as a member of the Detroit Board of Education. She has served on several committees for the Southeast Michigan Council of Governments (SEMCOG), where she is a Vice President. A graduate of Leadership Detroit, Mrs. Blackmon remains active in a number of civic and community organizations.

Marilynn E. Gosling (1995). Ms. Gosling was elected Vice President in January 2003. She was a member of the Oakland County Board of Commissioners for 14 years before retiring in January 1995. She currently serves on the Board of Directors of the Dispute Resolution Settlement Center and is active as a community mediator. She is also a board member of Camp Oakland Youth Programs, Inc. and the Local Development Company. Ms. Gosling has served as a member of the Community Mental Health Board and the Southeast Michigan Council of Governments (SEMCOG).

Hilliard L. Hampton (1994). Mr. Hampton is the Mayor of the City of Inkster. He also has twenty-eight years with Wayne County government. He currently serves as Sergeant with the Wayne County Sheriff's Department, where he is Supervisor of Community Justice. He has a Bachelor of Arts degree from Wayne State University in Mass Communications and has also received extensive training and certification in law enforcement.

John E. Johnson (2003). Mr. Johnson is an attorney and serves as Deputy Executive Director and Chief Operating Officer for the Legal Aid & Defender Association, Inc. in Detroit. Past employers include Wayne County Neighborhood Legal Services, the National Consumer Law Center, the UAW Legal Services Plans and the National Association for the Advancement of Colored People (NAACP), where he has served as Executive Director. Mr. Johnson also serves as chair of the Michigan Coalition for Human Rights, Wayne County Economic Development Corporation, Wayne County Brownfield Redevelopment Authority, and Detroit NAACP Legal Redress Committee and Predatory Lending Task Force. He is a past president of the Wolverine Bar Association, a 2nd vice president of the NAACP Michigan State Conference and a member of the State Bar of Michigan's Character and Fitness Committee and Access to Justice Task Force. Mr. Johnson received his undergraduate degree from Howard University, Washington D. C. and his Juris Doctorate from Valparaiso University School of Law, Valparaiso, Indiana.

Gregory Terrell (2003). Mr. Terrell is a Certified Public Accountant, and Managing Director and founder of Gregory Terrell & Company, a certified accounting firm founded in 1983. Mr. Terrell was previously an Audit Manager for Arthur Andersen LLP, and Manager of Accounting Policy & Research for Unysis. He currently serves on the Board of Directors of Charity Motors. He has also served on the boards of One Stop Capital Shop, the Lula Belle Stewart Center, the Accounting Aid Society and the National Association of Black Accountants. He has received numerous awards for service provided to civic and professional organizations. Mr. Terrell is a member of the American Institute of Certified Public Accountants, the Michigan Association of Certified Public Accountants and the National Association of Black Accountants - Detroit Chapter. He graduated cum laude with a Bachelor of Arts degree in Accounting from Dillard University of New Orleans, LA.

Carla Walker-Miller (2000). Ms. Walker-Miller is the President of Walker-Miller Energy Services, a distributor of power transmission and distribution equipment manufactured for use by electric utilities. She holds a Bachelor of Science Degree in Civil Engineering from Tennessee State University.

William G. Westrick (2000). Mr. Westrick was President of the engineering firm of Anderson, Eckstein and Westrick, Inc., and served as a member of the Board of Directors. He is a member of the Southern Michigan Water and Sewer Utilities Association. He serves on the Board of Directors of the Macomb County Traffic Association and the Northeast Water and Sewer Superintendent Association. Previously he was employed by the Macomb County Road Commission for nearly 10 years, first as a Project Engineer in charge of design and construction of individual projects, and finally as the Design and Construction Engineer, coordinating road and bridge projects. Mr. Westrick has a Bachelor of Science Degree in Civil Engineering from the University of Detroit and a Master of Science Degree in Civil Engineering from Wayne State University. He is a Registered Professional Engineer in the State of Michigan.

The Board appoints, with the approval of the Mayor, a director and deputy director who serve at the pleasure of the Board and are responsible for day to day operations of the Department.

Management and Personnel

The Department's budget for Fiscal Year 2005 provides funding for 3,399 positions, of which 1,086 positions are classified as strictly Sewer System and 226 positions are classified as strictly Water System. The remaining 2,087 positions are budgeted in the administrative and support divisions, which provide service to both the Sewage and Water Systems. The cost associated with these positions is allocated to the two systems either on the basis of actual time spent on projects or on estimates developed by the Department. The Department estimates that approximately 40% to 50% of the time allocation of the work force in these areas is attributable to the Sewage Disposal System. The Department's budget for Fiscal Year 2005 reflects reduced staffing as a result of the Department's performance improvement initiatives.

In December 2002, the Department was re-organized into five operating groups: Engineering, Assets Maintenance, Financial Services, Wastewater Operations, and Water Supply Operations. Each of the operating groups is headed by an Assistant Director. The Department is also reviewing its customer service activities and reorganizing its Commercial Operations Group to allow for improved functioning.

Victor M. Mercado, Director. Mr. Mercado was named Director of the Detroit Water and Sewerage Department on June 12, 2002. Mr. Mercado brings with him more than 25 years of experience in both the public and private sectors. He previously served as Vice President of Thames Water North America, and President and General Manager of Thames Water Puerto Rico (1999-2002); Vice President and General Manager of United Water Delaware and President of United Water Bethel and United Water Virginia (1997-1999); Chief of Emergency Construction for the Department of Environmental Protection in New York City (1996-1997); and Director of Operations for the Jamaica Water Supply Company in Jamaica, New York (1989-1996). Mr. Mercado has considerable experience in distribution and

transportation, construction, and the electric and gas industries. He holds a Bachelor of Science degree in Economics and Industrial Management from the City University of New York.

Gary Fujita, P.E., Deputy Director. Appointed Deputy Director in November 2002, Mr. Fujita has served as Interim Deputy Director since January 2002 and as Assistant Director of Wastewater since 1993. He has a Bachelor of Science degree in Civil Engineering from Wayne State University. He is a Registered Professional Engineer and holds a Class "A" Wastewater Treatment Operator's license. Mr. Fujita has been with the Department since 1972 and has also served as Chief Sewerage Plant Engineer. Mr. Fujita has considerable experience in engineering design, construction of major pipelines and related facilities, planning, wastewater treatment, industrial pretreatment, and combined sewer overflow control planning.

Louis Jarvis, Assistant Director - Asset Management. Mr. Jarvis was named Assistant Director in May 2004. Previously, Mr. Jarvis served as Process Quality Control Manager. He has worked in the Department since 2002. Mr. Jarvis brings with him more than 16 years experience in team building and employee development in the water and wastewater industry in both the public and private sectors. He previously served as Water and Wastewater Compliance Officer in Leesburg, Virginia; as Water and Wastewater Superintendent in New York City; and as Transmission Distribution Manager with Jamaica Water Supply Company, serving Queens and Long Island. Mr. Jarvis attended Cornell and Troy State Universities.

Awni Qaqish, P.E., Assistant Director - Office of Program Management. Mr. Qaqish is responsible for the Capital Improvement Program Management Group, Office of Program Management, Safety and Document Management. He is a Registered Professional Engineer. Previously, Mr. Qaqish served as the Assistant Director of Engineering Services. Before coming to the Department in 1980, Mr. Qaqish worked with consulting engineering firms and governmental agencies in Utah, Wyoming, Nebraska, and overseas with the government of Jordan. Mr. Qaqish has extensive experience in planning, design, construction and management of water and wastewater projects. Mr. Qaqish holds a Bachelor of Science degree in Civil Engineering from Utah State University. Mr. Qaqish's awards include the 1996 Outstanding Civil Engineer award from the Michigan Section of the American Society of Civil Engineers, the 1998 Zone II Government Engineer of the Year award from the American Society of Civil Engineers, the 1999 Outstanding professional Engineer award from the Michigan Society of Professional Engineers and the 2000 Leadership award from the Design-Build Institute of America.

James George, Assistant Director - Financial Planning Division. An Assistant Director since June 1999, Mr. George was selected for his current position in May 2001. He has experience with the City of Detroit in areas of Budget, Accounting, Cash Management, and Contract Administration. Mr. George holds Bachelor and Master's degrees in Accounting and is a candidate for Certified Public Accountant. He currently serves as a member of the Finance Committee of the American Water Works Association.

Louise Lieberman, Assistant Director - Wastewater Services. Ms. Lieberman was appointed Assistant Director in April 2003. Prior to her appointment, Ms. Lieberman served within the Department as Chief Sewage Plant Engineer. Ms. Lieberman has been with the Department more than 25 years in various professional capacities. She holds a Bachelor of Science in Chemical Engineering from the University of Michigan and a Masters in Library Science from Wayne State University. She has been a member of various professional organizations and has served on the Michigan Department of Environmental Quality's Board of Examiners for Municipal Operators for ten years.

Pamela Turner, Assistant Director - Water Supply Operations. Ms. Turner was named Assistant Director in April 2003. Prior to her selection Ms. Turner served as Water Quality Division Manager. She has worked in the Department since 1977. Ms. Turner holds a Bachelor of Science degree in Environmental Science and a Masters in Public Administration from the University of Michigan. Ms. Turner has served on the Michigan Department of Environmental Quality Technical Advisory Committee

EXHIBIT 7

1978 Rate Settlement
Agreement

(2)

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

THE UNITED STATES OF AMERICA,

Plaintiff and
Counter-Defendant,

-vs-

Civil Action No.
771100

STATE OF MICHIGAN,

Defendant and Counter-
Plaintiff and Cross-
Plaintiff,

-vs-

THE CITY OF DETROIT, a municipal
corporation, THE DETROIT WATER &
SEWERAGE DEPARTMENT,

Defendant and
Cross-Defendants,

-vs-

All Communities and Agencies Under
Contract with the City of Detroit
for Sewage Treatment Services.

SETTLEMENT AGREEMENT

This is an agreement of settlement between the City of Detroit and Thomas S. Welsh, Commissioner of the Department of Public Works, Macomb County, Michigan, acting for and on behalf of the County of Macomb, George W. Kuhn, Oakland County Drain Commissioner, Oakland County, Michigan, the County of Wayne, by the undersigned their respective representatives.

WHEREAS, the parties hereto are each parties in the above-captioned litigation, and are subject to the court's order entered September 9, 1977, concerning the sewage treatment rates adopted by the Detroit City Council on August 3, 1977, and the making and disposition of objections thereto by the parties, and

WHEREAS, objections have been filed by certain of the parties, and a panel of Masters appointed by the Court has conducted a trial upon such objections, and has rendered to the Court a Report and Recommendations, dated May 1, 1978 (hereafter, referred to as the "Masters' Report"), and

WHEREAS, the City of Detroit has filed objections to the Masters' Report, and the parties objecting to the aforesaid rates have filed a motion for adoption of the Masters' Report, and

WHEREAS, the parties hereto desire to avoid the delays and uncertainties attendant with further litigation and to resolve and settle their differences by amicable agreement,

NOW THEREFORE, the parties agree as follows:

1. Definitions. As used herein, the following terms shall have the following definitions:

- A. "1974 Rate Study" shall mean the Report on Sewage Rates, prepared by the Detroit Metro Water Department in December, 1974, introduced in evidence before the Masters as Exhibit 14.

- B. "1977 Rate Study" shall mean the Report on Wastewater Utility Revenue Requirements, Costs of Service and Charges, prepared by Black & Veatch of Michigan in June, 1977, and introduced in evidence before the Masters as Exhibit 9.
- C. "Differential Rate Of Return" shall mean the practice, technique or methodology employed in the 1974 Rate Study and the 1977 Rate Study, under which a rate of return on capital asset rate base is charged to customers residing or located within the City of Detroit, on the one hand, and customers residing or located without the City of Detroit, on the other, at a different percentage level. This term shall not include any uniformly applied ratemaking methodology or technique which directly assigns or allocates costs to different customer classes on the basis of use of different facilities or which recognizes differences in the cost of the service provided.
- D. "DWSD" means the City of Detroit and the Detroit Water and Sewerage Department, and any department or agency of the City of Detroit engaged in rendering sewage service under the contracts listed in Exhibit A hereto.

- E. "Contracting Parties" means the governments, government agencies and all other suburban customers listed in Exhibit A hereto, other than DWSD.
- F. "Fiscal year" means the period beginning on July 1 and ending on the next subsequent June 30.
"Fiscal 1978" means the fiscal year beginning July 1, 1977 and ending June 30, 1978, and similarly for other fiscal years.
- G. "Coverage" means the excess of revenues required to meet the coverage test over revenue requirements determined without respect to the coverage test. "Coverage Test" means the requirement imposed by Section 10 of Ordinance 517-E of the City of Detroit which provides that in the year of issuance of revenue bonds of standing equal to those presently outstanding, estimated net revenues shall be equal to at least one and one-half (1 1/2) times the largest amount of combined principal and interest to fall due in any future operating year on any bonds then payable out of the net revenues of the system, including such additional bonds then being issued.
- H. "Transportation Charge" means the aggregate of all costs assigned or allocated to contracting

parties served by the Macomb-Oakland interceptor which are not costs incurred for service in common with other customers, including all costs of operation and maintenance, depreciation, and, to the extent rates are based on a rate of return or other charge based on plant value, the cost resulting from application of such charge or rate to the interceptor and related equipment.

2. Effect of Settlement Agreement. This Settlement Agreement shall be consummated by amendments to the existing sewage treatment contracts between DWSD, on the one hand, and the respective parties listed on Exhibit A hereto. To the extent that this settlement agreement conflicts with or amplifies any of said agreements with respect to rates and charges for sewage treatment service, it shall control the interpretation of said agreements and the rights and dealings of the parties. Hereafter, all rates for provision of sewage treatment service to the contracting parties, for the duration of the respective terms of such agreements and any renewals thereof, except as may hereafter be agreed by the parties in writing, shall be adopted only in conformance with this Agreement. The amended contracts shall adopt the rate making principles contained in this Agreement.

Nothing herein shall be construed as an agreement that sewage or waste water treatment rates to the contracting parties shall be established other than in conformity with all applicable laws and regulations of the United States and of the State of Michigan, and the parties expressly agree

that all rates adopted effective January 1, 1980 and thereafter for the providing of sewage treatment service to all customers shall be in conformance with the requirements of the United States Public Law 92-500, 33 USCA 1251 et seq, as amended, and all applicable regulations adopted thereunder, except to the extent that the application of such laws and regulations is being contested in good faith.

3. Rates - September 1, 1977 through December 31, 1979. For the period beginning September 1, 1977 and ending December 31, 1979, rates shall be instituted and collected pursuant to the following provisions:

- A. DWSD has collected since September 1, 1977, and will continue to collect through the conclusion of fiscal year 1978, rates set by resolution of the Board of Water Commissioners dated July 8, 1977, and resolution of the City Council of the City of Detroit dated August 3, 1977.
- B. In fiscal 1979, and with respect to sewage service rendered on and after June 1, 1978, DWSD shall charge and bill the contracting parties at the rates set by resolution of the Board of Water Commissioners dated July 8, 1977, and the resolution of the City Council of the City of Detroit dated August 3, 1977, adjusted to exclude therefrom the collection of any differential rate of return between

customers residing or located in the City of Detroit and customers residing or located outside the City of Detroit. Such adjustment shall consist of the reduction of the rates to the contract parties to accomplish a reduction of revenues in the amount of \$2,944,700, based upon the same estimated sewage flows as were used for the establishment of rates to the contract parties in the 1977 rate study.

- C. In the period commencing July 1, 1979 and ending December 31, 1979, and with respect to sewage service rendered on and after June 1, 1979, DWSJ shall charge and bill the contracting parties at the rates established by resolution of the Board of Water Commissioners dated July 8, 1977, and the resolution of the City Council of the City of Detroit dated August 3, 1977, adjusted as follows:

(1) The rates shall be adjusted to exclude therefrom the collection of any differential rate of return between customers residing or located in the City of Detroit and customers residing or located outside the City of Detroit. Such adjustment shall consist of the reduction of the rates to the contract parties to accomplish a reduction of revenues in the amount of \$887,900; and

(2) Such rates shall further be adjusted to all customers, within and without the City of Detroit, to produce no differential rate of return and to produce an estimated surplus over the revenue requirements of the system, including coverage, of no more than \$2 million for the period July 1, 1979 through December 31, 1979.

4. Credit for Revenue Surpluses. Revenue Surpluses received by the Detroit Water and Sewerage Department in fiscal 1978 and 1979, and in the period July 1, 1979 - December 31, 1979, shall be credited to customers in accordance with Section I, B, 9 (Surplus Revenue Corrections) of the Masters Report with the following adjustments:

A. Attached hereto as Exhibit B, Schedules 1 and 2, are two schedules which set forth the mechanism by which surplus revenues will be determined. They are set forth for the sake of example, and are subject to determination of the actual results of operations for each of the periods set forth on the schedules, which determination shall be made on an unaudited basis according to consistent application of the accrual accounting principles ordinarily employed in maintaining the accounts of the Sewage Disposal Fund and used to produce the DWSD financial statements set forth in the audit report of Peat, Marwick & Mitchell for fiscal 1977.

B. The determination of surplus revenues shall be established as set forth above with respect to fiscal 1978, by August 15, 1978, with respect to fiscal 1979, by August 15, 1979, and with respect to the period July 1, 1979 through December 31, 1979, by February 15, 1980. Surplus revenues so determined shall be credited to customers, as follows:

- (1) The total credit for customers within the City of Detroit will be apportioned among them based on the relative monetary amount billed to each customer in the period in which the surplus occurred. Customers in the City of Detroit shall receive credits due them with respect to fiscal year 1978, by a single credit to each customer, to be applied to that customer's bill rendered in the month of January, February or March, 1979. With respect to fiscal year 1979, the credit to Detroit customers shall be made by application to bills rendered in January, February or March, 1980. With respect to the period July 1, 1979 - December 31, 1979, customers within the City of Detroit shall receive a single credit due them, by application to bills rendered in July, August or September, 1980.
- (2) The aggregate credit to customers without the City of Detroit shall be apportioned among them ratably with their billed sewage

flow for the period to which such credit is related. Customers without the City of Detroit shall receive credits due them on account of fiscal year 1978 surpluses by crediting of such credits in equal amounts to bills rendered from September 1, 1978 through June 30, 1979. Credits to customers without the City of Detroit for the fiscal year 1979

shall be credited in equal amounts to bills rendered to them from September 1, 1979 through June 30, 1980. Credits to the customer without the City of Detroit for the period July 1, 1979 - December 31, 1979 shall be credited in equal amounts to bills rendered to them from March 1, 1980 through December 1, 1980.

- C. In determining the surplus revenues for fiscal year 1978, Detroit may charge against current user charges \$9,219,000, less non-operating income accrued in fiscal 1978 except for earnings of the Bond and Interest Redemption Fund, for long-term capital improvements.
- D. In determining the level of surplus revenues for fiscal years 1978 and 1979, in each year, \$4 million may be deducted from the total

surplus calculated hereunder, and added to working capital accounts of the sewage disposal fund.

- E. Except as expressly stated in this subsection, surplus revenues during the fiscal years 1978, 1979 and the period July 1, 1979 - December 31, 1979 shall be determined in accordance with the provisions of this Agreement.

5. Future Ratemaking. Commencing with the period beginning January 1, 1980, and for the remaining terms of the contracts set forth in Exhibit A hereto, as such terms may be further extended pursuant to the terms of such contracts or by agreement of the parties, the following principles shall govern the establishment and adoption of rates for sewerage service to DWSO customers:

- A. Revenue Requirements. Revenue requirements shall be based upon the finances required to meet all operating, maintenance, capital requirements including debt financing and coverage, and any obligations imposed by law, and shall reflect not only recent cost experience but also a recognition of the reasonably estimated future cost levels during the period for which the rates are being established.

B. Maximum Debt Financing. Detroit shall obtain capital funds for the expansion, renewal and reconstruction of common use or solely suburban use major capital assets or improvements from the issuance of revenue bonds, to the maximum extent possible together with maximum use of coverage monies generated thereby.

C. Depreciation. User charges shall not reflect a charge for the depreciation of physical assets, which together with a rate of return and provision for operation and maintenance expense would generate revenues in excess of system revenue requirements including coverage.

D. Uniform Allocations of Costs Incurred. The recovery of costs incurred by the system shall be accomplished through the institution of rates which assign, allocate and apportion such costs to all ratepayers on the basis of principles uniformly applicable to all, it being the intention of the parties that such rates (whether designed on the utility or cash basis) will, as nearly as is practical, recover from each customer class the respective costs of providing service regardless of the ratepayer's location. In particular:

- (1) If rates are based upon a system of charging a percentage rate of return on net

asset or capital structure rate base, (through the use of the so-called utility basis of rate making) there shall be no differential in the rate of return charged to customers residing or located within the City of Detroit and customers residing or located without the City of Detroit. Nothing herein contained shall prohibit DWSD from designing its rates on the so-called cash basis, effective January 1, 1980 and thereafter..

(2) If rates for the transportation charge to customers served by the Oakland-Macomb interceptor are based upon the utility basis with a percentage rate of return, such rate of return shall be the same as the rate of return charged to other customers of the system. Nothing contained herein shall prohibit the City of Detroit from employing the cash basis of ratemaking on rates effective January 1, 1980 and thereafter, including rates for customers served by the Oakland-Macomb interceptor.

(3) Should the cash basis be used in any future rate study, the allocation of debt service costs to all customers or facilities shall be based upon the system weighted average interest rate at the time.

E. Future Ratemaking Information. Hereafter, commencing with the rate study currently being undertaken by Messrs. Camp, Dresser & McKee and Coopers & Lybrand, pursuant to Paragraph I B of the consent judgment entered herein on September 14, 1977, (effective September 9, 1977), whenever DWSD shall undertake any study which may result in the revision of rates, including any study relating to industrial cost recovery charges, user charges, or other matters relating to the requirements of P. L. 92-500, 33 U.S.C.A. 1251 et seq, as amended, it shall notify the appropriate agents of Oakland, Wayne and Macomb Counties, and its other contract customers of such study, and shall, during the course of any such study, make available, upon request, to such contract customers, their agents, consultants and attorneys, any interim or preliminary reports and final reports prepared in the course of such study.

In conjunction with furnishing the aforesaid reports, the City of Detroit and its consultants at the request of the contracting parties will have a conference with the contracting parties and representatives in order to explain and discuss the reports

being provided. The requesting party shall reimburse the DWSD for any out-of-pocket costs incurred in meeting such request. Nothing contained herein shall require the City of Detroit to undertake any activity which may impede it in complying with the requirements of the consent judgment dated September 14, 1977 or other orders of the Court entered pursuant to P. L. 92-500, 33 U.S.C.A. 1251, et seq, as amended. In addition, such presentation will be done in a manner, place, and time mutually convenient to all of the parties involved including the City of Detroit's consultants.

- F. For fiscal years 1978 and 1979, the period July 1, 1979 - December 31, 1979, and for all ratemaking periods thereafter, DWSD shall furnish to Macomb and Oakland Counties a statement of the transportation charge included in any rate under study or adopted, reflecting a breakdown of all costs included therein, and the rate per thousand cubic feet resulting from such charge.

6. The Court shall retain jurisdiction of the parties through December 31, 1980 to hear all disputes concerning refunds of surplus revenues and the implementation of these minutes of settlement.

7. The attorney fees, witness fees, consulting fees, and other expenses actually incurred by Macomb County, Oakland County and Wayne County in the prosecution of their

objections to the rates, including all such fees and expenses incurred through the completion of the calculation of credits due in fiscal 1979 with respect to fiscal 1978 surplus revenues, shall be reimbursed from the sum of all credits to be paid to all customers with respect to fiscal 1978. Such reimbursement shall be made by check drawn upon the DWSD, payable directly to the respective counties.

Annexed hereto as Exhibit C is a schedule of attorney fees and expenses to be reimbursed, incurred through June 30, 1978.

The cost of such reimbursement shall be deducted ratably from credits due all customers with respect to revenue surpluses derived from operations in fiscal 1978.

8. Schedules 1 and 2 (Exhibit B attached hereto) set forth the best present estimate of the City of Detroit of the anticipated surplus revenues for fiscal 1978 under the formula agreed upon herein and a determination of maximum debt financing for the projected capital improvement program.

9. The County of Oakland and DWSD shall, by appropriate pleadings and other instruments, consent to withdrawal by Oakland County of its right to the remand pursuant to the decision of the Michigan Court of Appeals dated February 7, 1978 and the Judgment of the trial court dated September 16, 1976, shall be reinstated by appropriate stipulation. It is agreed by the City of Detroit that the sewage treatment rates in effect and future rates shall be established pursuant to the principles agreed to herein and to the extent that

the judgment of the trial court and the decision of the Court of Appeals conflict with this settlement agreement, they shall be held for naught.

10. It is agreed that this settlement agreement is limited to sewage or waste water treatment rates and shall have no effect upon water service rates to any customer.

11. Payment for indirect benefits or services. Commencing with fiscal year 1979, and with respect to each fiscal year for which rates are set thereafter, following the computation of rates for customers residing or located within the City of Detroit and customers residing or located without the City of Detroit pursuant to the principles set forth in this settlement agreement, such rates shall be further adjusted by deducting from the revenues to be charged customers within the City of Detroit and adding to the revenues to be charged customers without the City of Detroit, and making appropriate adjustments of the rates for sewage service to be charged to such customers, an amount determined as follows:

- A. For the fiscal year 1979, such amounts shall be the sum of \$1 million. For each fiscal year thereafter, such amount shall be increased by 5%, determined upon a compounded basis. For example, the amount for fiscal 1980 shall be the sum of \$1,050,000. For fiscal 1981, this amount shall be the sum of \$1,102,500, and similarly for succeeding fiscal years.

B. This payment shall be made, and rates so adjusted as a payment to reflect the cost of indirect benefits or services provided by the City of Detroit to DWSD for common use facilities within the City of Detroit, such as police and fire protection, the risk of tort liability, the loss of tax base that the City loses as a result of the Department's tax exemption, and the fact that the suburbs receive sewage treatment without having to devote any of their land to a tax free utility.

C. In the event that the City of Detroit shall at any time hereafter render billings or accounting statements for indirect services to the DWSD such as police and fire protection, risk of tort liability, loss of tax base or any other type of contribution in lieu of taxes with the effect that such billings or statements become part of the DWSD budget for ratemaking purposes, then the amount of such charges allocated or apportioned to the contracting customers shall be deducted from the amount determined pursuant to subsection 11(A) above, and shall in no event exceed the amount determined pursuant to subsection 11(A) above.

- D. DMSD may continue to include in its rates charges for direct services which the City currently renders and bills to DMSD. Such "direct services" shall be limited to the kind of services historically provided by offices, departments or agencies of the City of Detroit such as various kinds of licenses and permits, electricity, steam, water, paving, vehicles, and rubbish pickup; the Ombudsman, the cost of which will be allocated between the customers within the City of Detroit and the customers without the City of Detroit based upon the proportionate number of complaints or inquiries by each such class of customers; and those which were included in the DMSD budget for fiscal 1978

No additional charges may be made for "direct services" provided by other or additional City offices, departments and/or agencies without the prior agreement of the contracting parties. Such agreement shall not be unreasonably denied or delayed should it appear that the particular service or services result in a legitimate, direct benefit to the system and its customers.

- E. The amount charged to the suburbs for payment for indirect benefits or services set forth in Paragraph 11(A) above shall be allocated among suburban customers in

the same manner in which treatment costs are allocated and billings for such amount shall commence with the first billing to the suburbs rendered in fiscal 1979.

- F. The \$1,000,000 credit to customers within the City of Detroit for fiscal year 1979 shall be accomplished by an additional credit to bills rendered in January, February or March 1979.

12. The funds now held in the escrow account established by the Court's order dated September 9, 1977, shall (after payment of the fees and expenses of the Masters herein, to be approved as to amount by the Court) be released and returned to the City of Detroit, Water & Sewerage Department.

EXHIBIT A

1. Oakland County by its Drain Commissioner and Department of Public Works.
2. County of Macomb by its designated County Agency.
3. County of Wayne by its Board of Public Works, Board of Water Commissioners, and Road Commission.
4. City of Allen Park.
5. City of Center Line.
6. City of Dearborn.
7. City of Farmington
8. City of Grosse Pointe.
9. City of Grosse Pointe Farms.
10. City of Grosse Pointe Park.
11. City of Hamtramck.
12. City of Highland Park.
13. City of Harper Woods.
14. City of Melvindale.
15. Redford Township.
16. Macomb Township

EXHIBIT B

SCHEDULE 1

DETERMINATION OF MAXIMUM DEBT FINANCING FOR
PROJECTED CAPITAL IMPROVEMENT PROGRAM

Line No.	1977-78	1978-79	July 1, 1979- Dec. 31, 1979
	Revenue Requirements		
1	Operation & Maintenance Expense 35,400,000	54,607,700	32,794,000
2	Existing Debt Service 5,265,400	5,227,300	2,608,500
3	Proposed Debt Service -	3,195,500	2,628,000
4	Total Debt Service 5,265,400	8,422,800	5,236,500
5	Debt Service Reserve 262,009	842,000	524,000
	Major Capital Require- ments		
6	Local Share of Financing 9,219,000	49,095,000	17,012,000
7	Less: Bond Funds -	46,500,000	15,000,000
8	Non-Operating Revenues 1,000,000	1,000,000	500,000
9	Revenue Financed Capital 8,219,000	1,595,000	2,512,000
10	Working Capital 4,000,000	4,000,000	-
	Total Revenue Requirements 53,146,409	69,467,500	41,066,500
	(Lines 1+4+5+9+10)		
	Coverage Requirement		
	Maximum Future Debt Service	9,619,400	10,974,800
	Coverage - 50%	4,808,200	5,487,400
	Total	14,424,600	16,462,200
	Operation & Maintenance Total Revenues to Meet Coverage Requirement	54,608,000	65,588,000
		69,032,600	82,050,200
			41,025,100

Note:

Maximum debt financing will result in the lowest annual revenue requirement. If more bonds are sold coverage will control requiring greater revenue. If fewer bonds are sold, greater cash financing of capital improvement will result in increased annual revenue requirements. For fiscal year 1978-79 total revenues must equal 69,032,600 to meet coverage requirements. For the first 6-months of fiscal 1980 \$41,025,100 in revenues are required to meet coverage (82,050,200 divide 2 = 41,025,100).

SCHEDULE 2

COMPARISON OF PROJECTED REVENUES WITH
COVERAGE REQUIREMENTS FOR MAXIMUM DEBT FINANCING

Line No.	1977-78	1978-79	July 1, 1979-(1) December 31, 1979	July 1, 1979-(2) December 31, 1979
1	Revenues Under Proposed Rates	61,028,900	75,451,900	46,382,800
2	Less: Differential in Rate of Return	0	2,944,700	887,900
3	Total Revenues Available To Meet Coverage Requirements	61,028,900	72,507,200	45,494,900
4	Total Coverage Requirement	0	69,032,600	41,025,100
5	Revenue Excess in Meeting Coverage		3,474,600	4,469,800
6	Total Funds Available to Meet Revenue Requirements			36,381,500
7	Operating Revenues	61,028,900	72,507,200	45,494,900
8	Less Revenue Requirement End of Year Balance	53,146,409	69,467,500	41,066,500
		7,882,491	3,039,700	4,428,400

(1) Projected revenues under rates scheduled to become effective July 1, 1979 and reflecting reduction of suburban rate of return.

(2) Projected revenues under continuation of fiscal 1978-79 rates.

EXHIBIT "C"

Nacomb County

Expenses

Bodman, Longley & Dahling
Blomberg, Snapp & Anderson

\$59,467.11
\$ 8,825.00
\$68,292.11

Oakland County

Whitman, Requardt & Associates
Davidson, Gotshall & Kohl
(William P. Hampton)

\$17,436.26
\$68,292.11
\$85,728.37

Wayne County

Wayne County Board of Public Works
Arthur Anderson and Co.

\$35,000.00
\$ 3,670.00
\$38,670.00

EXHIBIT 8

AFFIDAVIT OF BART FOSTER

STATE OF MICHIGAN)
) SS.
COUNTY OF WAYNE)

BART FOSTER, being first duly sworn, deposes and says as follows:

1. I am currently employed as a the President of The Foster Group, a consulting firm that provides financial and management advice to publicly owned utilities and other similar entities. I have a Bachelor of Science degree in Mechanical Engineering from the University of Kansas in 1983 and a Master's degree in Business Administration and Finance from the University of Kansas in 1985. Attached hereto as Exhibit A is a copy of my background and experience as a financial and rate consultant to municipally-owned water and wastewater utilities.
2. If sworn as a witness, I am competent to testify concerning the matters set forth below.
3. I have been engaged as a water and wastewater financial and rate consultant to the Detroit Water and Sewerage Department since 1985. Since 1992, I have been principally responsible for DWSD's water and wastewater rate studies.
4. In the course of my work for the City of Detroit, I have become familiar with the contracts between the City of Detroit and its suburban wholesale customers, including contracts with Wayne, Oakland and Macomb counties. I am also familiar with the terms of prior rate settlement agreements.
5. At the request of DWSD, I designed wastewater treatment rates to be effective on all bills rendered on or after August 1, 2005. Included in these rates was a provision to amortize an estimated construction cost of \$35 million related to repairs to the collapse of the Oakland Macomb Interceptor System near 15 Mile Road and Hayes Road. The annual revenue requirement associated with this

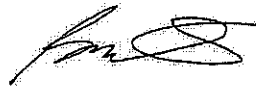
amortization and included in these rates was \$3 million, which was directly assigned to Macomb County.

6. The rates I designed have been approved by both the Board of Water Commissioners and the City Council for the City of Detroit.
7. In my opinion, Detroit requires the revenues to be derived from these rates to meet its ongoing operation and maintenance expenses and to finance its current capital improvement program.
8. In my opinion, the subject rates are consistent with the contracts between Detroit and its suburban wholesale customers; consistent with prior rate settlement agreements; and consistent with generally accepted wastewater ratemaking principles as modified by the prior settlement agreements.
9. At the request of DWSD, I have investigated the impact of these rates on Macomb County. A summary of the results of my investigation are illustrated by the attached Exhibit B, which compares the effective revenue required of Macomb County for FY 2004-05 and FY 2005-06. My analysis indicates that the effective increase to Macomb County associated with the \$3 million amortization revenue requirement is approximately 10.5%. However, other elements of Macomb County's allocated revenue requirement experienced very moderate increases, and some experienced decreases. As a result, the overall impact of the FY 2005-06 rates on Macomb County County is approximately 8.3%.
10. This impact is independent of the effects of the FY 2003-04 Lookback, which will be implemented with the FY 2005-06 rates. Macomb County will receive a credit during FY 2005-06 totaling approximately \$912,000.

11. The overall rate increase to the suburban wholesale customer class for FY 2005-06 was approximately 3.0%.

12. Macomb County's rate increase for the just completed fiscal year (FY 2004-05) was approximately 2.0%, compared to the suburban wholesale customer class average of approximately 4.5%.

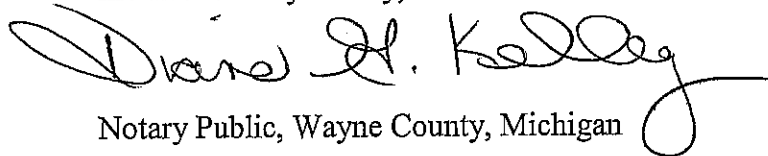
Further Affiant sayeth not.



BART FOSTER

Subscribed and sworn to before

me this 29th day of July, 2005.



Notary Public, Wayne County, Michigan

My Commission Expires: 03-16-2012

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ID\ RJM

DIANE G. KELLEY
NOTARY PUBLIC, STATE OF MI
COUNTY OF MACOMB
MY COMMISSION EXPIRES Mar 16, 2012
ACTING IN COUNTY OF Oakland

EXHIBIT 8-A

T F G
THE FOSTER GROUP

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LEAWOOD, KS 66225
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THE FOSTER GROUP, LLC
BART FOSTER, PRESIDENT
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The Foster Group offers financial and engineering management consulting services to a broad customer base, specializing in services for municipal utility clients in the United States. Our principal experience includes: managing financial planning, cost of service, and rate design studies for water and wastewater utilities; preparation of Consulting Engineer's Reports in conjunction with issuance of municipal water and sewer revenue bonds; development of other feasibility reports; design of financial management information systems; consulting assistance regarding contractual and other relationships amongst municipalities, and expert witness services in utility litigation matters.

The Foster Group maintains cooperative arrangements with several other professional service firms, large and small, to facilitate effective delivery of a wide variety of specialized consultative services.

The President of The Foster Group is Mr. Bart Foster, who has a lengthy career in providing strategic consulting services to municipal entities. Mr. Foster previously served as a director of a large consulting practice in an executive capacity, ultimately responsible for all management consulting services to municipal clients in the United States. His comprehensive experience includes: managing financial planning, cost of service, and rate design studies for water and wastewater utilities; preparation of Consulting Engineer's Reports in conjunction with issuance of municipal water and sewer revenue bonds; development of other feasibility reports; design of financial management information systems; consulting assistance regarding contractual and other relationships amongst municipalities, and expert witness services in utility litigation matters. Mr. Foster possesses expertise in the use of technology for economic, financial planning, program management, and presentation applications. Mr. Foster's combined technical, financial, and computer skills have proven well suited to address the challenges facing municipally owned utilities.

Representative Experience

Miscellaneous Services, Detroit, Michigan

Serves as business advisor and financial and rate expert for extensive financial planning and management consulting assistance for the Detroit Water & Sewerage Department. Specific projects have included general consultation regarding financial management issues, expert witness testimony in matters related to water and sewer rate disputes, assistance in addressing customer community issues, preparation of consulting engineer's reports for several bond prospectuses, development of long-term financial plans and planning procedures, consultation regarding cost of service allocation and rate design methodologies, assistance with improving accounting policies and procedures, development and implementation of several financial management systems, participation in the Department's long-term CSO

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control planning efforts, development of specifications for a capital improvement program financial tracking system, and establishment of recommended standard operating procedures and strategic plans for capital improvement programs.

Expert Witness Services and Other Advisory Services, Kalamazoo, Michigan

Serves as business advisor for extensive financial planning and management consulting assistance for the City of Kalamazoo Department of Public Utilities. Provides consulting advice to the Utilities Director, the City Manager and the Wastewater Utility Advisory Board, made up of representatives of contractual wholesale customers and retail customers outside the City limits as well as City staff. Past assignments have included successful expert witness services in wastewater rate arbitration processes.

Financial and Rate Consulting Services, Ann Arbor, Michigan

Served as Executive in Charge of business advisory services to the City of Ann Arbor as it investigated modifications to the cost recovery practices of its Storm Water Utility. Key issues included development of user fees that reflect robust cost of service principles and meet strict legal guidelines in the State of Michigan.

Expert Witness Services, Bay County, Michigan

Successfully served as Executive-in-Charge for expert witness services provided to the County Department of Public Works in water rate disputes with contractual customers.

Expert Witness Services, Holland, Michigan

Successfully served as Executive-in-Charge for expert witness services provided to the City's Utilities Department in water rate disputes with contractual customers.

Financial and Rate Consulting Services, Wyoming, Michigan

Served as Executive-in-Charge and business advisor for financial planning and utility rate consulting assistance for the City of Wyoming. Key issues have included development of strategic financial plans for the Utilities aggressive long-term capital improvement programs and consultation on new service contracts with contractual customer communities.

Financial and Rate Consulting Services, Grand Rapids, Michigan

Served as as Executive-in-Charge and business advisor for utility rate consulting assistance for the City of Grand Rapids. Key issues have included implementation of new cost allocation models among the City's contract communities, meetings with EPA regarding the City's user charge system, and development of a new basis for industrial surcharge rates.

Wastewater Services, Allegheny County Sanitary Authority, Pittsburgh, Pennsylvania

Served as Executive-in-Charge of a wastewater rate study for 83 wholesale communities, including Pittsburgh, in addition to a financial feasibility study for a revenue bond sale targeted to fund the initial phases of a billion dollar capital improvement program.

Water Rate Consulting Services, Cincinnati, Ohio

Served as Principal-in-Charge for financial and water rate consulting services for Cincinnati Water Works. Key issues of included development of financial plans that incorporate goals of the Water Works strategic business plan and expansion to new service areas.

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Water and Sewer Rate Consulting Services, Columbus, Ohio

Served as Executive-in-Charge for financial and water rate consulting services for the City of Columbus Public Utilities Department. Key issues have included development of implementation plans for recommended changes in cost of service allocations, specifically regarding service provided to outside City customer classes, and the development of implementation plans for alternative methods of treating infiltration/inflow cost responsibility.

Education

B.S., Mechanical Engineering, University of Kansas, 1983

M.B.A., Finance, University of Kansas, 1985

Registered Professional Engineer: Kansas

Affiliations

AWWA, WEF

Publications/Presentations

"Show Me the Money," published in *Water Environment & Technology*, October 2002.

"Capital Financing Strategies," presented at the 2002 AWWA/WEF Joint Management Conference, March 2002.

"An Integrated Partnering Approach to Determining Cost Responsibility For Detroit's Investment in Combined Sewer Overflow Facilities," published in *Government Finance Review*, June 2000.

"Rolling Down the River," published in *Technology Century*, October 1997.

"Selling Utility Financing Decisions," presented at the AWWA Annual Conference and Expo in Toronto, Canada, June 26, 1996.

"Utility Financial Policy," presented at the Michigan Section American Water Works Association's Annual Conference in Traverse City, Michigan, September 12, 1995.

"Modeling Financial Success," presented at the Water Environment Federation/American Water Works Association's Joint Management Conference in Tulsa, Oklahoma, February 14, 1995.

"Financing and Cost Allocation of CSO Control Systems in a Major Metropolitan Area," presented at the WEF Annual Conference and Exposition in Anaheim, California, October 7, 1993.

April 8, 2005

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"A Computerized Approach to Capital Program Management," presented at the AWWA Computer Conference in Nashville, Tennessee, April 14, 1992.

"Utility Financial Planning and Rate Design by Computer," published in *Public Works*, October 1990.

EXHIBIT 8-B

Exhibit B
Summary of DWSD Rates / Charges to Macomb County
FY 2004-05 vs. FY 2005-06

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
	Units	2005 Charge	2005 Rev Req't (1) * (2)	2006 Charge	2006 Rev Req't (1) * (4)	Variance (5) - (3)	% Variance (6)/(3)	% Impact on Revenue Req'ts (6)/(3 Line 10)	
1	Commodity - \$/Mcf	2,200,000	10.20	22,440,000	10.21	22,462,000	22,000	0.10%	0.08%
2	Fixed (\$/mo)								
3	Wet Weather Flow Related	12	56,644	679,727	70,092	841,108	161,381	23.7%	0.6%
4	DWSD Wet Weather Facilities	12	19,845	238,134	33,272	399,266	161,132	67.7%	0.6%
5	Macomb Specific (OMI Allocation) (a)	12	170,141	2,041,692	89,410	1,072,923	(968,769)	-47.4%	-3.4%
6	Macomb Specific - Amortized RSA (b)	12	96,982	1,163,781	96,982	1,163,781	0	0.0%	0.0%
7	Macomb Specific - Garfield Int (c)	12	158,333	1,900,000	158,333	1,900,000	0	0.0%	0.0%
8	Subtotal Fixed		501,945	6,023,334	448,090	5,377,078	(646,256)	-10.7%	-2.3%
9	SUBTOTAL			28,463,334		27,839,078	(624,256)	-2.2%	-2.2%
10	Macomb Specific - 15 & Hayes 2004 (d)	12	0	0	250,000	3,000,000	3,000,000	NA	10.5%
	TOTAL			28,463,334		30,839,078	2,375,744	8.3%	8.3%

- (a) Macomb's share of costs allocated in the rate model to the Oakland / Macomb Interceptor
 (b) Macomb specific costs related to the Oakland / Macomb Interceptor as stipulated in various Rate Settlement Agreements
 (c) Amortization of estimated costs of constructing the Garfield Interceptor
 (d) Amortization of estimated costs of repairs associated with the 2004 collapse